SAT Report

PMN Number: **P-10-0486**
SAT Date: **8/17/2010**
Print Date: **8/7/2014**

Related cases: [redacted]

Concern levels:

Type of Concern:	Health	Eco	Comments
Level of Concern:	1-2	2	

Persistence	Bioaccum	Toxicity	Comments
1	1	1	

Exposure Based Review:

Health: No
Ecotox: Yes

Routes of exposure:

Health: Dermal Drinking Water Inhalation
Ecotox: All releases to water
Fate: ;

P2Rec Comments:

Comment: No Comment

Keywords:

Keywords: IRR-E,S,MM,L
LUNG
AQUATOX-A,C

Summary of Assessment:

Fate:

Fate Summary: P-10-0486-87
FATE: MW = 646 with 14.8% < 500 and 93% < 1000
Solid
S = Disp.

VP < 1.0E-6 torr at 25 C (E)
BP > 400 C (E)
H < 1.00E-8 (E)
POTW removal (%) = 25-90; OECD 301F(Mano Resp): 18.87-4.40%/28d;OECD302A(Porous Pot): 41% removal; OECD301F(Mano Resp):42.4-64.2%/28D;
OECD301B(ModSturm CO2 ev): 86.1-96.1%OECD301A(Ready Biodeg): 10.9-54.5%/28d.
Time for complete ultimate aerobic biodeg = wk
Sorption to soils/sediments = low - moderate
PBT Potential: P1B1
*CEB FATE: Migration to ground water = moderate

Health:

Health Summary: Absorption is poor from the skin, moderate from the GI tract, and good from the lung, based on analogs. There are concerns for surfactant effects on the lung, and for irritation to the eye, skin (chronic), mucous membranes and lung, based on surfactant properties of the compound.

Ecotox:

Test Organism	Test Type	Test End Point	Predicted	Measured	Comments
fish	**96-h**	**LC50**	2.6		
daphnid	**48-h**	**LC50**	1.8		
green algal	**96-h**	**EC50**	<6.8		
fish	**_**	**chronic value**	0.40		ACR 6.5
daphnid	**_**	**chronic value**	0.28		ACR 6.5
algal	**_**	**chronic value**	<1.7		ACR 4
Sewage Sludge	**3-h**	**EC50**	**_**		
Sewage Sludge	**_**	**Chronic Value**	**_**		

Ecotox Values Comments: Predicted based on SARs for anionic surfactants; Ecotox chemical class: surfactant-anionic-C15-SO4; MW 646 with 93% < 1000 and 14.8% < 500; solid with mp = unknown; S = dispersible in water at 25 C (P); pH7; hardness <150.0 mg/L as CaCO3; ECs based on 100% active ingredients and mean measured concentrations; and TOC <2.0 mg/L;

Factors	Values	Comments
Assessment Factor	10	
Concentration of Concern (ppb)	28	
SARs	anionic surfactant	

SAR Class	surfactant-anionic-C15-SO4	
Ecotox Category		

Ecotox Factors Comments:

SAT Chair: J. Kwiat

Focus Report

New Chemicals Program

PMN Number: **P-10-0486**

Focus Date:	08/25/2010 11:00:00 PM	Report Status:	Completed
Consolidated Set:	P-10-0486; P-10-0487		
Focus Chair:	Jeff Bauer	Contractor:	Christina Stanley

I. Notice Information

Submitter:	Sasol North America	CAS Number:	958238-81-8
Chemical Name:	Poly[oxy(methyl-1,2-ethanediyl)], .alpha.-sulfo-.omega.-hydroxy-, C12-13-branched and linear alkyl ethers, sodium salts		
Use:	Surfactant for enhanced oil recovery from oil wells Consolidated set: P-10-486-487. [redacted] are for the same use, from same submitter. STN file CA: No references found. PV above is for total import into US. 1,800,000 kg/yr will be sold in US; 3,600,000 kg/yr will be exported.		
Other Uses:	All analogs are surfactants.		
PV-Max:	5,400,000 Kg/yr		
Manufacture:		Import:	X

II. SAT Results

(1) **Health Rating:** 1-2 **Eco Rating:** 2 **Comments:** ;

Occupational: 1C **Non-Occupational:** **Environmental:** 3

(1) **PBT:** 1 1 1 **Comments:**

III. OTHER FACTORS

Categories:

Health Chemical Category:

Ecotox SAR and Category: anionic surfactant;

Related Cases/Regulatory History:

Health related Cases: [redacted]

Ecotox Related Cases: [redacted]

Regulatory History:

[redacted] PENDING 5(e)C ORDER DEVELOPMENT

MSDS/Label Information:

MSDS:	Yes	Label:	No
General Equipment:	Eng Controls: Ensure adequate ventilation, especially in confined areas. // Eye: when contact with liquid is likely, use face shield and chemical resistant goggles. Otherwise use safety glasses or goggles. // Skin: Full protective clothing, chemical boots, and chemical gloves when contact with liquid is possible.		
Respirator:	If exposure limmits are likely to be exceeded, use NIOSH approved respiratory protection.		
Health Effects:	Eyes: Irritating to eyes. May cause corneal inflammation. // Skin: repeated or prolonged contact can cause reddening and scaling of the skin (dermatitis). // Inhalation: negligible hazard due to low volatility. // Ingestion: No hazard due to low order of toxicity.		
TLV/PEL (PMN or raw material):	- none established		

Exposure Based Information:

Exposure Based Review:	Y	Exposure Based Review (Health):	N
Exposure Based Review (Eco):	Y	Exposure Based (Occupational):	No
Exposure Based Review (Non Occupatuional):	N	Exposure Based (Environmental):	Y

Exposure Parameter	Exposure-Based	Persistent/Bioaccum	Exposure Value
Surface DW:		Yes	
Fish Ingestion:			
Ground DW:	Yes		2.62
Inhalation:			0
Water Releases:	Yes		1.01
Total Releases:	Yes		6931.52381625
Consumer Exposure:	Yes		905276.60996625

IV. Summary of SAT Assessment

Fate:

Fate Summary:

P-10-0486-87
FATE: MW = 646 with 14.8% < 500 and 93% < 1000
Solid
S = Disp.
VP < 1.0E-6 torr at 25 C (E)
BP > 400 C (E)
H < 1.00E-8 (E)
POTW removal (%) = 25-90; OECD 301F(Mano Resp): 18.87-4.40%/28d;OECD302A(Porous Pot): 41% removal; OECD301F(Mano Resp):42.4-64.2%/28D;
OECD301B(ModSturm CO2 ev): 86.1-96.1%OECD301A(Ready Biodeg): 10.9-54.5%/28d.
Time for complete ultimate aerobic biodeg = wk
Sorption to soils/sediments = low - moderate
PBT Potential: P1B1
*CEB FATE: Migration to ground water = moderate

Health:

Health Summary:

Absorption is poor from the skin, moderate from the GI tract, and good from the lung, based on analogs. There are concerns for surfactant effects on the lung, and for irritation to the eye, skin (chronic), mucous membranes and lung, based on surfactant properties of the compound.

Ecotox:

Ecotox Values:

Fish 96-h LC50:	2.6(P)
Daphnid 48-h LC50:	1.8(P)
Green algal 96-h EC50:	<6.8(P)
Fish Chronic Value:	0.40(P)
Daphnid ChV:	0.28(P)
Algal ChV:	<1.7(P)

Ecotox values comments:

Predicted based on SARs for anionic surfactants; Ecotox chemical class: surfactant-anionic-C15-SO4; MW 646 with 93% < 1000 and 14.8% < 500; solid with mp = unknown; S = dispersible in water at 25 C (P); pH7; hardness <150.0 mg/L as CaCO3; ECs based on 100% active ingredients and mean measured concentrations; and TOC <2.0 mg/L;

Ecotox Factors:

Assessment Factor: 10
Concern Concentration: 28
- Chronic Value

V. Summary of Exposures/Releases

Engineering Summary: P-10-0486

Exposures/Releases	Release	Release	Release
Scenario	**PROC1: Transfer Operations at Import Receiving Site**	**PROC1: Transfer Operations at Import Receiving Site**	**PROC1: Transfer Operations at Import Receiving Site**
Sites	**1**	**1**	**1**
Media	**Incineration**	**Water**	**Water**
Descriptor A	Output 2	Output 2	Output 2
Quantity A (Release = kg/site/day; Exposure = mg/day)	8.6E+0	1.1E+2	8.3E+1
Frequency A (day/year)	12	1	12
Descriptor B			
Quantity B (Release = kg/site/day; Exposure = mg/day)			
Frequency B (day/year)			
From	Sampling Liquid Raw Material	Equipment Cleaning Losses of Liquids from Storage Tanks	Cleaning Liquid Residuals from Ships or ISO Containers Used to Transport the Raw Material
Workers			
Exposure Type			

Engineering Summary: Exposures/Releases	Release	Release	Release
Scenario	**PROC2: Transfer Operations a Customer Site**	**PROC2: Transfer Operations a Customer Site**	**PROC2: Transfer Operations a Customer Site**
Sites	**3**	**3**	**3**
Media	**Water**	**Incineration**	**Water**
Descriptor A	Output 1	Output 2	Output 2
Quantity A (Release = kg/site/day; Exposure = mg/day)	2.6E+1	4.5E-1	5.7E+1
Frequency A (day/year)	99	99	1
Descriptor B	Output 2		
Quantity B (Release = kg/site/day; Exposure = mg/day)	5.6E+0		
Frequency B (day/year)	99		
From	Cleaning Liquid Residuals from Rail Cars Used to Transport the Raw Material	Sampling Liquid Raw Material	Equipment Cleaning Losses of Liquids from Holding Tank
Workers			
Exposure Type			

V. Summary of Exposures/Releases

Engineering Summary: P-10-0486

Exposures/Releases	Release	Release	Release
Scenario	**USE: Oilfield Application**	**USE: Oilfield Application**	**USE: Oilfield Application**
Sites	**3**	**3**	**3**
Media	**Water**	**Incineration**	**Water**
Descriptor A	Output 1	Output 2	Output 2
Quantity A (Release = kg/site/day; Exposure = mg/day)	2.4E+1	1.9E-1	5.7E+1
Frequency A (day/year)	1	365	1
Descriptor B	Output 2		
Quantity B (Release = kg/site/day; Exposure = mg/day)	6.0E+0		
Frequency B (day/year)	1		
From	Cleaning Liquid Residuals from Tank Trucks Used to Transport the Raw Material	Sampling Liquid Raw Material	Equipment Cleaning Losses of Liquids from Holding Tank
Workers			
Exposure Type			

Engineering Summary: Exposures/Releases	Release	Release	Release
Scenario	**USE: Oilfield Application**	**USE: Oilfield Application**	**USE: Oilfield Application**
Sites	**3**	**3**	**3**
Media	**Other**	**Incineration**	**Deepwell Injection**
Descriptor A	Output 2	Output 2	Output 2
Quantity A (Release = kg/site/day; Exposure = mg/day)	8.2E+2	8.2E+2	1.0E-3
Frequency A (day/year)	365	365	365
Descriptor B			
Quantity B (Release = kg/site/day; Exposure = mg/day)			
Frequency B (day/year)			
From	Chemical remaining in oil well	Chemical in oil to refinery (incineration)	Chemical in produced water (deep well injected)
Workers			
Exposure Type			

V. Summary of Exposures/Releases

Engineering Summary: P-10-0486

Exposures/Releases	Release	Release	Exposure
Scenario	**USE: Oilfield Application**	**USE: Oilfield Application**	**PROC1: Transfer Operations at Import Receiving Site**
Sites	**3**	**3**	**1**
Media	**Water**	**Landfill**	**Dermal**
Descriptor A	Output 2	Output 2	High End
Quantity A (Release = kg/site/day; Exposure = mg/day)	2.9E-5	1.7E-4	2.6E+2
Frequency A (day/year)	365	365	12
Descriptor B			
Quantity B (Release = kg/site/day; Exposure = mg/day)			
Frequency B (day/year)			
From	Chemical in produced water (discharged)	Chemical in produced water to land	Sampling Liquid Raw Material
Workers			31
Exposure Type			Liquid

Engineering Summary: Exposures/Releases	Exposure	Exposure	Exposure
Scenario	**PROC1: Transfer Operations at Import Receiving Site**	**PROC2: Transfer Operations a Customer Site**	**PROC2: Transfer Operations a Customer Site**
Sites	**1**	**3**	**3**
Media	**Dermal**	**Dermal**	**Dermal**
Descriptor A	High End	High End	High End
Quantity A (Release = kg/site/day; Exposure = mg/day)	5.3E+2	5.3E+2	2.6E+2
Frequency A (day/year)	12	250	250
Descriptor B			
Quantity B (Release = kg/site/day; Exposure = mg/day)			
Frequency B (day/year)			
From	Unloading Liquid Raw Material from Ships or ISO Containers	Unloading Liquid Raw Material from Rail Cars or Tank Trucks	Sampling Liquid Raw Material
Workers	31	33	33
Exposure Type	Liquid	Liquid	Liquid

V. Summary of Exposures/Releases

Engineering Summary: P-10-0486

Exposures/Releases	Exposure	Exposure	
Scenario	**USE: Oilfield Application**	**USE: Oilfield Application**	
Sites	**3**	**3**	
Media	**Dermal**	**Dermal**	
Descriptor A	High End	High End	
Quantity A (Release = kg/site/day; Exposure = mg/day)	5.3E+2	2.6E+2	
Frequency A (day/year)	250	250	
Descriptor B			
Quantity B (Release = kg/site/day; Exposure = mg/day)			
Frequency B (day/year)			
From	Unloading Liquid Raw Material from Tank Trucks	Sampling Liquid Raw Material	
Workers			
Exposure Type	Liquid	Liquid	

VI. Focus Decision and Rationale

Regulatory Actions

Regulatory Decision: PMN Ban Pending Upfront Testing Decision Date: 08/25/2010
Type of Decision:

Rationale: P-10-0486 will be regulated under the TSCA 5(e) category (anionic surfactants) Ban Pending Up Front Testing under the risk and exposure based authorities for ecotoxicity concerns. Human health concerns were low-moderate and risks were addressed with adequate PPE recommendations and warnings listed in the MSDS. The following EAB exposure based criteria were met: Drinking (Surface) Water Dose (2.62E+00 mg/kg/day), Inhalation Dose (1.01E+00 mg/kg/day), Surface Water Release After Treatment (6.93E+03 kg/yr) and Total Release After Treatment (9.05E+05 kg/yr). Ecotoxicity concerns were moderate and risks are from releases to water where the 28 ppb chronic COC was exceeded 99 d/yr (SWC: 2512.89 ppb) during processing #2 and the acute COC of 360 ppb was exceeded during processing #1, processing #2 and use. Ecotoxicity testing will be base set acute, Fish acute toxicity test (OPPTS: 850.1075), Aquatic Invertebrate acute toxicity test freshwater daphid (OPPTS: 850.1010), and algal toxicity tiers I and II (OPPTS: 850.5400). Fish and daphnia testing will be done using the flow-through method and the static method will be used for algal. If the test substance is determined to be of very low solubility than then Difficult to test Protocols should be used (OPPTS 850.1000). A certificate of analysis is required of the submitter, measured concentrations are required, and it is recommended that a RAD representative approve all protocols before beginning testing. No human health or fate testing is requested. Ecotoxicity testing can be done on P10-0487 for both PMN's. Due to the high production volume they can test both PMNs.

Summary of Exposures and Releases
PROC1: Transfer Operations at Import Receiving Site
1 site, 31 workers, 12 days/yr
Inhalation: negligible (VP < 0.001 torr)
Dermal: Liquid at 30.00%: 2.6E+2 mg/day over 12 days/yr
Dermal: Liquid at 30.00%: 5.3E+2 mg/day over 12 days/yr

Releases via Water: 1.1E+2 kg/site-day over 1 day/yr from 1 site
Releases via Water: 8.3E+1 kg/site-day over 12 days/yr from 1 site
Releases via Incineration: 8.6E+0 kg/site-day over 12 days/yr from 1 site

Fate Releases to water (25.00 % removal)
SWC: 2.68E+04 ppb
DW: LADD: 2.81E-05 mg/kg/day, ADR: 1.29 mg/kg/day
FI: LADD: 0.00 mg/kg/day, ADR: 0.00 mg/kg/day

Fate Releases to water (25.00 % removal)
SWC: N/A ppb
DW: LADD: 1.61E-04 mg/kg/day, ADR: N/A mg/kg/day
FI: LADD: 0.00 mg/kg/day, ADR: 0.00 mg/kg/day

PROC2: Transfer Operations a Customer Site
3 sites, 33 workers, 300 days/yr
Inhalation: negligible (VP < 0.001 torr) .
Dermal: Liquid at 30.00%: 5.3E+2 mg/day over 250 days/yr
Dermal: Liquid at 30.00%: 2.6E+2 mg/day over 250 days/yr

Releases via Water: 2.6E+1 kg/site-day over 99 days/yr from 3 sites, 5.6E+0 kg/site-day over 99 days/yr from 3 sites
Releases via Water: 5.7E+1 kg/site-day over 1 day/yr from 3 sites
Releases via Incineration: 4.5E-1 kg/site-day over 99 days/yr from 3 sites

Fate Releases to water (25.00 % removal)
SWC: 8021.91 ppb
DW: LADD: 3.36E-05 mg/kg/day, ADR: 0.39 mg/kg/day
FI: LADD: 0.00 mg/kg/day, ADR: 0.00 mg/kg/day

Fate Releases to water (25.00 % removal)
SWC: 2512.89 ppb
DW: LADD: 1.04E-03 mg/kg/day, ADR: 0.12 mg/kg/day
FI: LADD: 0.00 mg/kg/day, ADR: 0.00 mg/kg/day
>COC (28.00 ppb): 99 days

USE: Oilfield Application
3 sites, 24 workers, 365 days/yr
Inhalation: negligible (VP < 0.001 torr)
Dermal: Liquid at 30.00%: 5.3E+2 mg/day over 250 days/yr
Dermal: Liquid at 30.00%: 2.6E+2 mg/day over 250 days/yr

Releases via Water: 2.4E+1 kg/site-day over 1 day/yr from 3 sites, 6.0E+0 kg/site-day over 1 day/yr from 3 sites
Releases via Water: 5.7E+1 kg/site-day over 1 day/yr from 3 sites
Releases via Water: 2.9E-5 kg/site-day over 365 days/yr from 3 sites
Releases via Incineration: 1.9E-1 kg/site-day over 365 days/yr from 3 sites
Releases via Incineration: 8.2E+2 kg/site-day over 365 days/yr from 3 sites
Releases via Landfill: 1.7E-4 kg/site-day over 365 days/yr from 3 sites
Releases via Deepwell Injection: 1.0E-3 kg/site-day over 365 days/yr from 3 sites
Releases via Other: 8.2E+2 kg/site-day over 365 days/yr from 3 sites

Fate Releases to water (25.00 % removal)
SWC: 5.73E+04 ppb
DW: LADD: 1.17E-04 mg/kg/day, ADR: 2.62 mg/kg/day
FI: LADD: 0.00 mg/kg/day, ADR: 0.00 mg/kg/day

Stack Air: LADD: 8.09E-02 mg/kg/day, ADR: 1.01 mg/kg/day

Fate Releases to water (25.00 % removal)
SWC: 2.05E-02 ppb
DW: LADD: 1.53E-08 mg/kg/day, ADR: 9.37E-07 mg/kg/day
FI: LADD: 0.00 mg/kg/day, ADR: 0.00 mg/kg/day
>COC (28.00 ppb): 0 days

P2 Rec Comments:

Testing:

Final Recommended:

Health:
Eco:
Fate:
Other:

VII. CCD Disposition/DD

CCD: Standard Review
DD:

Focus Report

New Chemicals Program

PMN Number: **P-10-0487**

Focus Date:	08/25/2010 11:00:00 PM	Report Status:	Completed
Consolidated Set:	P-10-0486; P-10-0487		
Focus Chair:	Jeff Bauer	Contractor:	Christina Stanley

I. Notice Information

Submitter:	Sasol North America	CAS Number:	958238-82-9
Chemical Name:	Poly[oxy(methyl-1,2-ethanediyl)], .alpha.-sulfo-.omega.-hydroxy-, C14-15-branched and linear alkyl ethers, sodium salts		
Use:	Surfactant for enhanced oil recovery from oil wells Consolidated set: P-10-486-487. [redacted] are for the same use, from same submitter. STN file CA: No references found. PV above is for total import into US. 3,600,000 kg/yr will be sold in US; 1,800,000 kg/yr will be exported.		
Other Uses:	All analogs are surfactants.		
PV-Max:	5,400,000 Kg/yr		
Manufacture:		Import:	X

II. SAT Results

(1) **Health Rating:** 1-2 **Eco Rating:** 3 **Comments:** ;

Occupational: 1C **Non-Occupational:** **Environmental:** 3

(1) **PBT:** 1 1 1 **Comments:**

III. OTHER FACTORS

Categories:

Health Chemical Category:

Ecotox SAR and Category: anionic surfactants;

Related Cases/Regulatory History:

Health related Cases: [redacted]

Ecotox Related Cases: [redacted]

Regulatory History:

[redacted] PENDING 5(e)C ORDER DEVELOPMENT

MSDS/Label Information:

MSDS:	Yes Label: No
General Equipment:	Eng Controls: Ensure adequate ventilation, especially in confined areas. // Eye: when contact with liquid is likely, use face shield and chemical resistant goggles. Otherwise use safety glasses or goggles. // Skin: Full protective clothing, chemical boots, and chemical gloves when contact with liquid is possible.
Respirator:	If exposure limmits are likely to be exceeded, use NIOSH approved respiratory protection.
Health Effects:	Eyes: Irritating to eyes. May cause corneal inflammation. // Skin: repeated or prolonged contact can cause reddening and scaling of the skin (dermatitis). // Inhalation: negligible hazard due to low volatility. // Ingestion: No hazard due to low order of toxicity.
TLV/PEL (PMN or raw material):	- none established

Exposure Based Information:

Exposure Based Review:	Y	Exposure Based Review (Health):	N
Exposure Based Review (Eco):	Y	Exposure Based (Occupational):	No
Exposure Based Review (Non Occupatuional):		Exposure Based (Environmental):	

IV. Summary of SAT Assessment

Fate:

Fate Summary:

P-10-0486-87
FATE: MW = 646 with 14.8% < 500 and 93% < 1000
Solid
S = Disp.
VP < 1.0E-6 torr at 25 C (E)
BP > 400 C (E)
H < 1.00E-8 (E)
POTW removal (%) = 25-90; OECD 301F(Mano Resp): 18.87-4.40%/28d;OECD302A(Porous Pot): 41% removal; OECD301F(Mano Resp):42.4-64.2%/28D; OECD301B(ModSturm CO2 ev): 86.1-96.1%OECD301A(Ready Biodeg): 10.9-54.5%/28d.
Time for complete ultimate aerobic biodeg = wk
Sorption to soils/sediments = low - moderate
PBT Potential: P1B1
*CEB FATE: Migration to ground water = moderate

Health:

Health Summary:

Absorption is poor from the skin, moderate from the GI tract, and good from the lung, based on analogs. There are concerns for surfactant effects on the lung, and for irritation to the eye, skin (chronic), mucous membranes and lung, based on surfactant properties of the compound.

Ecotox:

Ecotox Values:

Fish 96-h LC50:	0.26(P)
Daphnid 48-h LC50:	<0.80(P)
Green algal 96-h EC50:	<2.0(P)
Fish Chronic Value:	0.040(P)
Daphnid ChV:	<0.12(P)
Algal ChV:	<0.50(P)

Ecotox values comments:

Predicted based on SARs for anionic surfactants; Ecotox chemical class: surfactant-anionic-C17-SO4; MW 686 with 90% < 1000 and 8.3% < 500; solid with mp = unknown; S = dispersible in water at 25 C (P); pH7; hardness <150.0 mg/L as CaCO3; ECs based on 100% active ingredients and mean measured concentrations; and TOC <2.0 mg/L;

Ecotox Factors:

Assessment Factor: 10
Concern Concentration: 4
- Chronic Value

V. Summary of Exposures/Releases

Engineering Summary: P-10-0487

Exposures/Releases	Release	Release	Release
Scenario	**PROC1: Transfer Operations at Import Receiving Site**	**PROC1: Transfer Operations at Import Receiving Site**	**PROC1: Transfer Operations at Import Receiving Site**
Sites	**1**	**1**	**1**
Media	**Incineration**	**Water**	**Water**
Descriptor A	Output 2	Output 2	Output 2
Quantity A (Release = kg/site/day; Exposure = mg/day)	8.6E+0	1.1E+2	8.3E+1
Frequency A (day/year)	12	1	12
Descriptor B			
Quantity B (Release = kg/site/day; Exposure = mg/day)			
Frequency B (day/year)			
From	Sampling Liquid Raw Material	Equipment Cleaning Losses of Liquids from Storage Tanks	Cleaning Liquid Residuals from Ships or ISO Containers Used to Transport the Raw Material
Workers			
Exposure Type			

Engineering Summary: Exposures/Releases	Release	Release	Release
Scenario	**PROC2: Transfer Operations a Customer Site**	**PROC2: Transfer Operations a Customer Site**	**PROC2: Transfer Operations a Customer Site**
Sites	**3**	**3**	**3**
Media	**Water**	**Incineration**	**Water**
Descriptor A	Output 1	Output 2	Output 2
Quantity A (Release = kg/site/day; Exposure = mg/day)	2.6E+1	4.5E-1	5.7E+1
Frequency A (day/year)	99	99	1
Descriptor B	Output 2		
Quantity B (Release = kg/site/day; Exposure = mg/day)	5.6E+0		
Frequency B (day/year)	99		
From	Cleaning Liquid Residuals from Rail Cars Used to Transport the Raw Material	Sampling Liquid Raw Material	Equipment Cleaning Losses of Liquids from Holding Tank
Workers			
Exposure Type			

V. Summary of Exposures/Releases

Engineering Summary: P-10-0487

Exposures/Releases	Release	Release	Release
Scenario	**USE: Oilfield Application**	**USE: Oilfield Application**	**USE: Oilfield Application**
Sites	**3**	**3**	**3**
Media	**Water**	**Incineration**	**Water**
Descriptor A	Output 1	Output 2	Output 2
Quantity A (Release = kg/site/day; Exposure = mg/day)	2.4E+1	1.9E-1	5.7E+1
Frequency A (day/year)	1	365	1
Descriptor B	Output 2		
Quantity B (Release = kg/site/day; Exposure = mg/day)	6.0E+0		
Frequency B (day/year)	1		
From	Cleaning Liquid Residuals from Tank Trucks Used to Transport the Raw Material	Sampling Liquid Raw Material	Equipment Cleaning Losses of Liquids from Holding Tank
Workers			
Exposure Type			

Engineering Summary: Exposures/Releases	Release	Release	Release
Scenario	**USE: Oilfield Application**	**USE: Oilfield Application**	**USE: Oilfield Application**
Sites	**3**	**3**	**3**
Media	**Other**	**Incineration**	**Deepwell Injection**
Descriptor A	Output 2	Output 2	Output 2
Quantity A (Release = kg/site/day; Exposure = mg/day)	8.2E+2	8.2E+2	1.0E-3
Frequency A (day/year)	365	365	365
Descriptor B			
Quantity B (Release = kg/site/day; Exposure = mg/day)			
Frequency B (day/year)			
From	Chemical remaining in oil well	Chemical in oil to refinery (incineration)	Chemical in produced water (deep well injected)
Workers			
Exposure Type			

V. Summary of Exposures/Releases

Engineering Summary: P-10-0487

Exposures/Releases	Release	Release	Exposure
Scenario	**USE: Oilfield Application**	**USE: Oilfield Application**	**PROC1: Transfer Operations at Import Receiving Site**
Sites	**3**	**3**	**1**
Media	**Water**	**Landfill**	**Dermal**
Descriptor A	Output 2	Output 2	High End
Quantity A (Release = kg/site/day; Exposure = mg/day)	2.9E-5	1.7E-4	2.6E+2
Frequency A (day/year)	365	365	12
Descriptor B			
Quantity B (Release = kg/site/day; Exposure = mg/day)			
Frequency B (day/year)			
From	Chemical in produced water (discharged)	Chemical in produced water to land	Sampling Liquid Raw Material
Workers			31
Exposure Type			Liquid

Engineering Summary: Exposures/Releases	Exposure	Exposure	Exposure
Scenario	**PROC1: Transfer Operations at Import Receiving Site**	**PROC2: Transfer Operations a Customer Site**	**PROC2: Transfer Operations a Customer Site**
Sites	**1**	**3**	**3**
Media	**Dermal**	**Dermal**	**Dermal**
Descriptor A	High End	High End	High End
Quantity A (Release = kg/site/day; Exposure = mg/day)	5.3E+2	5.3E+2	2.6E+2
Frequency A (day/year)	12	250	250
Descriptor B			
Quantity B (Release = kg/site/day; Exposure = mg/day)			
Frequency B (day/year)			
From	Unloading Liquid Raw Material from Ships or ISO Containers	Unloading Liquid Raw Material from Rail Cars or Tank Trucks	Sampling Liquid Raw Material
Workers	31	33	33
Exposure Type	Liquid	Liquid	Liquid

V. Summary of Exposures/Releases

Engineering Summary: P-10-0487

Exposures/Releases	Exposure	Exposure	
Scenario	**USE: Oilfield Application**	**USE: Oilfield Application**	
Sites	**3**	**3**	
Media	**Dermal**	**Dermal**	
Descriptor A	High End	High End	
Quantity A (Release = kg/site/day; Exposure = mg/day)	5.3E+2	2.6E+2	
Frequency A (day/year)	250	250	
Descriptor B			
Quantity B (Release = kg/site/day; Exposure = mg/day)			
Frequency B (day/year)			
From	Unloading Liquid Raw Material from Tank Trucks	Sampling Liquid Raw Material	
Workers			
Exposure Type	Liquid	Liquid	

VI. Focus Decision and Rationale

Regulatory Actions

Regulatory Decision: PMN Ban Pending Upfront Testing Decision Date: 08/25/2010
Type of Decision:

Rationale: P-10-0487 will be regulated under the TSCA 5(e) category (anionic surfactants) Ban Pending Up Front Testing under the risk and exposure based authorities for ecotoxicity concerns. Human health concerns were low-moderate and risks were addressed with adequate PPE recommendations and warnings listed in the MSDS. The following EAB exposure based criteria were met: Drinking (Surface) Water Dose (2.62E+00 mg/kg/day), Inhalation Dose (1.01E+00 mg/kg/day), Surface Water Release After Treatment (6.93E+03 kg/yr) and Total Release After Treatment (9.05E+05 kg/yr). Ecotoxicity concerns were moderate and risks are from releases to water where the 4.0 ppb chronic COC was exceeded 99 d/yr (SWC: 2512.89 ppb) during processing #2 and the acute COC of 52 ppb was exceeded during processing #1, processing #2 and use. Ecotoxicity testing will be base set acute, Fish acute toxicity test (OPPTS: 850.1075), Aquatic Invertebrate acute toxicity test freshwater daphid (OPPTS: 850.1010), and algal toxicity tiers I and II (OPPTS: 850.5400). Fish and daphnia testing will be done using the flow-through method and the static method will be used for algal. If the test substance is determined to be of very low solubility than then Difficult to test Protocols should be used (OPPTS 850.1000). A certificate of analysis is required of the submitter, measured concentrations are required, and it is recommended that a RAD representative approve all protocols before beginning testing. No human health or fate testing is requested. Ecotoxicity testing can be done on P10-0487 for both P10-0486 and P10-0487. Due to the high production volume they can test both PMNs.

Summary of Exposures and Releases
PROC1: Transfer Operations at Import Receiving Site
1 site, 31 workers, 12 days/yr
Inhalation: negligible (VP < 0.001 torr)
Dermal: Liquid at 30.00%: 2.6E+2 mg/day over 12 days/yr
Dermal: Liquid at 30.00%: 5.3E+2 mg/day over 12 days/yr

Releases via Water: 1.1E+2 kg/site-day over 1 day/yr from 1 site
Releases via Water: 8.3E+1 kg/site-day over 12 days/yr from 1 site
Releases via Incineration: 8.6E+0 kg/site-day over 12 days/yr from 1 site

Fate Releases to water (25.00 % removal)
SWC: 2.68E+04 ppb
DW: LADD: 2.81E-05 mg/kg/day, ADR: 1.29 mg/kg/day
FI: LADD: 0.00 mg/kg/day, ADR: 0.00 mg/kg/day

Fate Releases to water (25.00 % removal)
SWC: N/A ppb
DW: LADD: 1.61E-04 mg/kg/day, ADR: N/A mg/kg/day
FI: LADD: 0.00 mg/kg/day, ADR: 0.00 mg/kg/day

PROC2: Transfer Operations a Customer Site
3 sites, 33 workers, 300 days/yr
Inhalation: negligible (VP < 0.001 torr) .
Dermal: Liquid at 30.00%: 5.3E+2 mg/day over 250 days/yr
Dermal: Liquid at 30.00%: 2.6E+2 mg/day over 250 days/yr

Releases via Water: 2.6E+1 kg/site-day over 99 days/yr from 3 sites, 5.6E+0 kg/site-day over 99 days/yr from 3 sites
Releases via Water: 5.7E+1 kg/site-day over 1 day/yr from 3 sites
Releases via Incineration: 4.5E-1 kg/site-day over 99 days/yr from 3 sites

Fate Releases to water (25.00 % removal)
SWC: 8021.91 ppb
DW: LADD: 3.36E-05 mg/kg/day, ADR: 0.39 mg/kg/day
FI: LADD: 0.00 mg/kg/day, ADR: 0.00 mg/kg/day

Fate Releases to water (25.00 % removal)
SWC: 2512.89 ppb
DW: LADD: 1.04E-03 mg/kg/day, ADR: 0.12 mg/kg/day
FI: LADD: 0.00 mg/kg/day, ADR: 0.00 mg/kg/day
>COC (4.00 ppb): 99 days

USE: Oilfield Application
3 sites, 24 workers, 365 days/yr
Inhalation: negligible (VP < 0.001 torr)
Dermal: Liquid at 30.00%: 5.3E+2 mg/day over 250 days/yr
Dermal: Liquid at 30.00%: 2.6E+2 mg/day over 250 days/yr

Releases via Water: 2.4E+1 kg/site-day over 1 day/yr from 3 sites, 6.0E+0 kg/site-day over 1 day/yr from 3 sites
Releases via Water: 5.7E+1 kg/site-day over 1 day/yr from 3 sites
Releases via Water: 2.9E-5 kg/site-day over 365 days/yr from 3 sites
Releases via Incineration: 1.9E-1 kg/site-day over 365 days/yr from 3 sites
Releases via Incineration: 8.2E+2 kg/site-day over 365 days/yr from 3 sites
Releases via Landfill: 1.7E-4 kg/site-day over 365 days/yr from 3 sites
Releases via Deepwell Injection: 1.0E-3 kg/site-day over 365 days/yr from 3 sites
Releases via Other: 8.2E+2 kg/site-day over 365 days/yr from 3 sites

Fate Releases to water (25.00 % removal)
SWC: 5.73E+04 ppb
DW: LADD: 1.17E-04 mg/kg/day, ADR: 2.62 mg/kg/day
FI: LADD: 0.00 mg/kg/day, ADR: 0.00 mg/kg/day

Stack Air: LADD: 8.09E-02 mg/kg/day, ADR: 1.01 mg/kg/day

Fate Releases to water (25.00 % removal)
SWC: 2.05E-02 ppb
DW: LADD: 1.53E-08 mg/kg/day, ADR: 9.37E-07 mg/kg/day
FI: LADD: 0.00 mg/kg/day, ADR: 0.00 mg/kg/day
>COC (4.00 ppb): 0 days

P2 Rec Comments:

Testing:

Final Recommended:

Health:
Eco:
Fate:
Other:

VII. CCD Disposition/DD

CCD: Standard Review
DD:

Briefing Paper

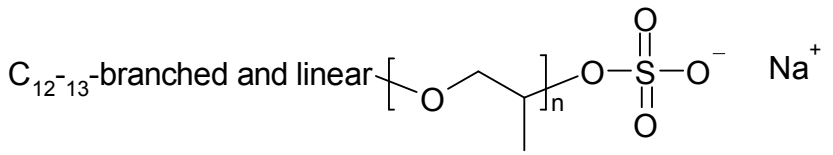
Case Number: **P-10-0486**
Hybrid: Risk- and Exposure-Based
Risk Based Ecotoxicity; Exposure based Ecotoxicity

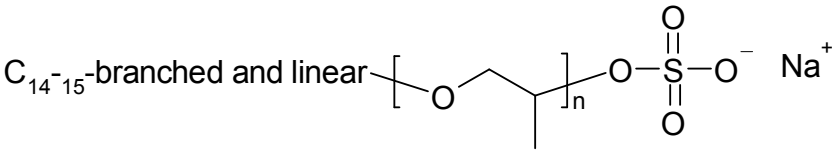
Part I: Background Data

Program Manager: Kristan Markey
Technical Integrator:
Review Team: Christina Cinalli, Gregory Macek
CCD Options Date:
CCD Dispo Date: 03/07/2011
DD Meeting Date:
Day In Process: 91
Day 90: 07/22/2011

A. CBI Claims:
B. Submitter: Sasol North America
C. Chemical Identity: Poly[oxy(methyl-1,2-ethanediyl)], .alpha.-sulfo-.omega.-hydroxy-, C12-13-branched and linear alkyl ethers, sodium salts
D. Chemical Class:
Ecotox: anionic surfactant ; surfactant-anionic-C15-SO4

E. Structure:





P-10-486 P-10-0487

F. Physical/Chemical properties:
VP: Measured Torr @ 25 C
Est. <0.000001 Torr @ 25 C
s-H2O: Measured g/L
MW: 646.00 g/mol 14.80 %<500 93.00 %<1000
Phys State: Neat: Solid (est.)
Manufacturing: NK: Imported
Process/Form: Solution/Dispersion: 27-30% in water
End Use: Solution, 0.05-0.5% in aqueous formulation
G. Volume: 5400000 kg/yr
H. Use: Surfactant for enhanced oil recovery from oil wells Consolidated set: P-10-486-487. [redacted] are for the same use, from same submitter. STN file CA: No references found. PV above is for total import into US. 1,800,000 kg/yr will be sold in US; 3,600,000 kg/yr will be exported.
I. Test Data Submitted: Biodeg and aquatic toxicity
Water solubility
Hydrolytic stability

J. MSDS:
MSDS: Yes Label: No

General equipment: Eng Controls: Ensure adequate ventilation, especially in confined areas. // Eye: when contact with liquid is likely, use face shield and chemical resistant goggles. Otherwise use safety glasses or goggles. // Skin: Full protective clothing, chemical boots, and chemical gloves when contact with liquid is possible.

Respirator: If exposure limmits are likely to be exceeded, use NIOSH approved respiratory protection.

Health Effects: Eyes: Irritating to eyes. May cause corneal inflammation. // Skin: repeated or prolonged contact can cause reddening and scaling of the skin (dermatitis). // Inhalation: negligible hazard due to low volatility. // Ingestion: No hazard due to low order of toxicity.

K. SAT Ratings:

Human Health: 1-2 ; Environment: 2 ;

L. Focus Results: P-10-0486 will be regulated under the TSCA 5(e) category (anionic surfactants) Ban Pending Up Front Testing under the risk and exposure based authorities for ecotoxicity concerns. Human health concerns were low-moderate and risks were addressed with adequate PPE recommendations and warnings listed in the MSDS. The following EAB exposure based criteria were met: Drinking (Surface) Water Dose (2.62E+00 mg/kg/day), Inhalation Dose (1.01E+00 mg/kg/day), Surface Water Release After Treatment (6.93E+03 kg/yr) and Total Release After Treatment (9.05E+05 kg/yr). Ecotoxicity concerns were moderate and risks are from releases to water where the 28 ppb chronic COC was exceeded 99 d/yr (SWC: 2512.89 ppb) during processing #2 and the acute COC of 360 ppb was exceeded during processing #1, processing #2 and use. Ecotoxicity testing will be base set acute, Fish acute toxicity test (OPPTS: 850.1075), Aquatic Invertebrate acute toxicity test freshwater daphid (OPPTS: 850.1010), and algal toxicity tiers I and II (OPPTS: 850.5400). Fish and daphnia testing will be done using the flow-through method and the static method will be used for algal. If the test substance is determined to be of very low solubility than then Difficult to test Protocols should be used (OPPTS 850.1000). A certificate of analysis is required of the submitter, measured concentrations are required, and it is recommended that a RAD representative approve all protocols before beginning testing. No human health or fate testing is requested. Ecotoxicity testing can be done on P10-0487 for both PMN's. Due to the high production volume they can test both PMNs.

Summary of Exposures and Releases
PROC1: Transfer Operations at Import Receiving Site
1 site, 31 workers, 12 days/yr
Inhalation: negligible (VP < 0.001 torr)
Dermal: Liquid at 30.00%: 2.6E+2 mg/day over 12 days/yr
Dermal: Liquid at 30.00%: 5.3E+2 mg/day over 12 days/yr

Releases via Water: 1.1E+2 kg/site-day over 1 day/yr from 1 site
Releases via Water: 8.3E+1 kg/site-day over 12 days/yr from 1 site
Releases via Incineration: 8.6E+0 kg/site-day over 12 days/yr from 1 site

Fate Releases to water (25.00 % removal)
SWC: 2.68E+04 ppb
DW: LADD: 2.81E-05 mg/kg/day, ADR: 1.29 mg/kg/day
FI: LADD: 0.00 mg/kg/day, ADR: 0.00 mg/kg/day

Fate Releases to water (25.00 % removal)
SWC: N/A ppb
DW: LADD: 1.61E-04 mg/kg/day, ADR: N/A mg/kg/day
FI: LADD: 0.00 mg/kg/day, ADR: 0.00 mg/kg/day

PROC2: Transfer Operations a Customer Site
3 sites, 33 workers, 300 days/yr
Inhalation: negligible (VP < 0.001 torr) .
Dermal: Liquid at 30.00%: 5.3E+2 mg/day over 250 days/yr
Dermal: Liquid at 30.00%: 2.6E+2 mg/day over 250 days/yr

Releases via Water: 2.6E+1 kg/site-day over 99 days/yr from 3 sites, 5.6E+0 kg/site-day over 99 days/yr from 3 sites
Releases via Water: 5.7E+1 kg/site-day over 1 day/yr from 3 sites
Releases via Incineration: 4.5E-1 kg/site-day over 99 days/yr from 3 sites

Fate Releases to water (25.00 % removal)
SWC: 8021.91 ppb
DW: LADD: 3.36E-05 mg/kg/day, ADR: 0.39 mg/kg/day
FI: LADD: 0.00 mg/kg/day, ADR: 0.00 mg/kg/day

Fate Releases to water (25.00 % removal)
SWC: 2512.89 ppb
DW: LADD: 1.04E-03 mg/kg/day, ADR: 0.12 mg/kg/day
FI: LADD: 0.00 mg/kg/day, ADR: 0.00 mg/kg/day
>COC (28.00 ppb): 99 days

USE: Oilfield Application
3 sites, 24 workers, 365 days/yr
Inhalation: negligible (VP < 0.001 torr)
Dermal: Liquid at 30.00%: 5.3E+2 mg/day over 250 days/yr
Dermal: Liquid at 30.00%: 2.6E+2 mg/day over 250 days/yr

Releases via Water: 2.4E+1 kg/site-day over 1 day/yr from 3 sites, 6.0E+0 kg/site-day over 1 day/yr from 3 sites
Releases via Water: 5.7E+1 kg/site-day over 1 day/yr from 3 sites
Releases via Water: 2.9E-5 kg/site-day over 365 days/yr from 3 sites
Releases via Incineration: 1.9E-1 kg/site-day over 365 days/yr from 3 sites
Releases via Incineration: 8.2E+2 kg/site-day over 365 days/yr from 3 sites
Releases via Landfill: 1.7E-4 kg/site-day over 365 days/yr from 3 sites
Releases via Deepwell Injection: 1.0E-3 kg/site-day over 365 days/yr from 3 sites
Releases via Other: 8.2E+2 kg/site-day over 365 days/yr from 3 sites

Fate Releases to water (25.00 % removal)
SWC: 5.73E+04 ppb
DW: LADD: 1.17E-04 mg/kg/day, ADR: 2.62 mg/kg/day
FI: LADD: 0.00 mg/kg/day, ADR: 0.00 mg/kg/day

Stack Air: LADD: 8.09E-02 mg/kg/day, ADR: 1.01 mg/kg/day

Fate Releases to water (25.00 % removal)
SWC: 2.05E-02 ppb
DW: LADD: 1.53E-08 mg/kg/day, ADR: 9.37E-07 mg/kg/day
FI: LADD: 0.00 mg/kg/day, ADR: 0.00 mg/kg/day
>COC (28.00 ppb): 0 days

Part II: New Information

EPA has rejected the effluent toxicity testing, but accepted the biodegradation testing. However, they've provided extensive information on the customer handling processes. CEB has reviewed this information and accepted the specific practices identified by the downstream users.

Exposure Scenario[1]	Water						Landfill	Stack Air		Fugitive Air	
Release activity(ies)[2]; exposure calculation(s)[3]	Drinking Water		Fish Ingestion		7Q10[4] CC = 4	PDM Days Exceeded	LADD	ADR	LADD	ADR	LADD
	ADR	LADD	ADR	LADD							
	mg/kg/day	mg/kg/day	mg/kg/day	mg/kg/day	µg/l	# Days	mg/kg/day	mg/kg/day	mg/kg/day	mg/kg/day	mg/kg/day
PROC1: max acute eco	---	---	---	---	---	---	---	3.00E-01	---	---	---
PROC1: Max LADD	---	---	---	---	---	---	---	---	4.49E-04	---	---
PROC2: max acute eco	---	---	---	---	---	---	---	7.72E-02	---	---	---
USE: Max ADR: max acute eco	9.37E-07	---	---	---	2.05E-02	---	---	1.02E+00	---	---	---
USE: PDM1	---	---	---	---	2.05E-02	0	---	---	---	---	---
USE: Max LADD	---	1.53E-08	---	---	---	---	---	---	8.09E-02	---	---

9/18/2013: Congruent with the discussion on [redacted], RAD and EAB have accepted the biodeg/effluent toxicity testing on P-10-0486/487 (the testing was conducted on P-10-0486, and applied, by analog to [redacted] and P-10-487). See memo.

Part III: Recommendation and Rationale

9/24/2013: The PM recommends revoking the CO and modifying the SNUR to match the decision for [redacted]: A SNUR requiring all releases from manufacturing, processing, and use are injected to Class I or II wells, incinerated, or released to waters only after treatment by a POTW or WWT with biological treatment (40 CFR 721.90 a(2)(ii), b(2)(ii), c(2)(ii)). Recommended testing will include the Cripes test that was previously going to be required.

Because the Cripes studies (acute ecotoxicity) has already been completed on P-10-0486, the PM recommends that recommended testing include a Cripes acute ecotox studies on P-10-0487, and Cripes chronic ecotox studies on P-10-0486.

Previous recommendation
The PM recommends a 5(e) risk-based consent order because of the very specific conditions described to necessary. The specific restrictions would be:
- For operations releasing involving potential releases to saltwater or standing bodies of water, the company shall, or only agree to sell to customers who,
  - For transfer operations at the receiving site:
    - Cleaning of Storage Tanks: Sasol will mandate that the PMN substances will be rinsed from the holding tank using a solvent (i.e. diesel) and that the rinse aid be collected for incineration
    - Cleaning of ship-board tanks: Sasol will mandate that the PMN substance be rinsed from the ship-tank using a solvent (i.e. diesel) and that the rinse-aid be collected for incineration - Cleaning of Iso Containers: Sasol will mandate that the PMN substance be triple-rinsed using a solvent (i.e. diesel) and that the rinse-aid be collected for incineration
  - For transfer operations at the customer site:
    - Cleaning liquid residuals from rail cars used to transport the raw material: Sasol will mandate that the PMN substances be rinsed from the railcars using a solvent (i.e. diesel) and that the rinse-aid be collected for incineration.
    - Cleaning liquid residuals from trucks used to transport the raw material: Sasol will mandate that the PMN substances be rinsed from the railcars using a solvent (i.e. diesel) and that the rinse-aid be collected for incineration.
    - Equipment Cleaning Losses of Liquids from Holding Tanks: Sasol will mandate that the PMN substances be rinsed from the holding-tank using a solvent (i.e. diesel) and that the rinse-aid be collected for incineration
  - For Oilfield Application
    - Equipment Cleaning losses of liquids from Holding Tank: When the PMN substances will no longer be injected into the well at a particular site, the field holding tank will also need to be cleaned. The tank will be cleaned by rinsing it with water. The residual PMN substances and the water rinse-aid will be injected into the EOR well at the completion of the project. Any remaining field water which could contain trace amounts of the PMN substance would be injected into the EOR well or into a designated disposal well on the field.

The Consent Order should detail these approaches in the preamble.

For non-saltwater releases, the Company should be bound to the following water triggers:
P-10-0486: 28 ppb
P-10-0487: 4 ppb

Because the ecotoxicity testing was rejected by EPA, it should be triggered on both substances, but the Agency might accept the data on P-10-0487.

Part IV: Risk Summary

A. Health Effects:

Absorption is poor from the skin, moderate from the GI tract, and good from the lung, based on analogs. There are concerns for surfactant effects on the lung, and for irritation to the eye, skin (chronic), mucous membranes and lung, based on surfactant properties of the compound.

B. Environmental Effects:

Ecotox: predicted (P) and measured (M) toxicity value is mg/L (ppm) are:

Fish 96-h LC50:	2.6(P)
Daphnid 48-h LC50:	1.8(P)
Green algal 96-h EC50:	<6.8(P)
Fish Chronic Value:	0.40(P)
Daphnid ChV:	0.28(P)
Algal ChV:	<1.7(P)

C. Environmental Releases and Exposures:

D. Risk Estimates:

Part V: Exposure Criteria Met

Exposure Based Review (Chemistry):	● Yes ○ No	**Exposure Based Review (Health):**	○ Yes ● No
Exposure Based Review (Ecotox):	● Yes ○ No	**Exposure Based Review (Occupational):**	● Yes ○ No
Exposure Based Review (Non-Occupational):	○ Yes ● No	**Exposure Based Review (Environmental):**	● Yes ○ No

Exposure Based Review Criteria--Engineering Report			Amt
Exposure Parameter	**Exposure-Based**	**Persistent/Bioaccum**	**Exposure Value**
Inhalation:	● Yes ○ No	○ Yes ○ No	1.02
Total Releases:	● Yes ○ No	○ Yes ○ No	901747.30996625

Part VI: Tests

Final Testing Recommendation
Health:

Eco:
Fate:
Other:

Comments:

Part VII: Other Factors

A. Substitutes:

B. Benefits:

C. Other Uses: All analogs are surfactants.

D. Other:

Part VIII: Regulatory History

[redacted]: PENDING 5(e)C ORDER DEVELOPMENT

Comments:

Last Updated by

Document Created by Kristan Markey **on** 03/03/2011

Ricky Stackhouse, Ph.D.
Manager, Toxicology & Risk Assessment
Global Product Safety
Phone: 337-494-5263
Fax: 281-368-1537
email: ricky.stackhouse@us.sasol.com

21 July 2011

US Environmental Protection Agency
Kenneth Moss
EPA East Building
Room 4133G
1201 Constitution Avenue, NW
Washington, DC
20004

Dear Mr. Moss:

Please find enclosed the signed copy of the section 5(e) Consent Order for PMNs P10-486 and P10-487.

Regards,

Ricky Stackhouse, Ph.D.
Manager, Toxicology & Risk Assessment

CONTAINS NO CBI

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

OFFICE OF POLLUTION PREVENTION AND TOXICS

REGULATION OF NEW CHEMICAL SUBSTANCES

PENDING DEVELOPMENT OF INFORMATION

In the matter of:	)	Premanufacture Notice Numbers:
	)	
	)	
	)	
	)	
	)	
Sasol North America Inc.	)	P-10-0486 and P-10-0487
	)	
	)	
	)	
	)	
	)	

Consent Order and Determinations Supporting Consent Order

TABLE OF CONTENTS

PREAMBLE

I. INTRODUCTION

Under the authority of § 5(e) of the Toxic Substances Control Act ("TSCA") (15 U.S.C. 2604(e)), the Environmental Protection Agency ("EPA" or "the Agency") issues the attached Order, regarding premanufacture notices ("PMNs") P-10-0486 and P-10-0487 for the chemical substances Poly[oxy(methyl-1,2-ethanediyl)], -sulfo--hydroxy-, C12-13-branched and linear alkyl ethers, sodium salts (Chemical Abstract Service Registry Number (CASRN) 958238-81-8) and Poly[oxy(methyl-1,2-ethanediyl)], .alpha.-sulfo-.omega.-hydroxy-, C14-15-branched and linear alkyl ethers, sodium salts (CASRN 958238-82-9), respectively ("the PMN substances") submitted by Sasol North America Inc.("the Company"), to take effect upon expiration of the PMN review period. The Company submitted the PMN to EPA pursuant to § 5(a)(1) of TSCA and 40 CFR Part 720.

Under § 15 of TSCA, it is unlawful for any person to fail or refuse to comply with any provision of § 5 or any order issued under § 5. Violators may be subject to various penalties and to both criminal and civil liability pursuant to § 16, and to specific enforcement and seizure pursuant to § 17. In addition, chemical substances subject to an Order issued under § 5 of TSCA, such as this one, are subject to the § 12(b) export notice requirement.

II. SUMMARY OF TERMS OF THE ORDER

The Consent Order for these PMN substances requires the Company to:

(a) submit to EPA certain toxicity testing on P-10-0487 at least 14 weeks before manufacturing or importing a combined total of 330,000 kilograms of both PMN substances, or 18 months, whichever comes later;

(b) label the PMN substances and provide Material Safety Data Sheets ("MSDS") in accordance with the provisions of the Hazard Communication Program section;

(c) distribute the PMN substances only to a person who agrees to follow the same restrictions (except the testing requirements);

(d) comply with the Disposal provisions;

(e) comply with the Release to Water provisions; and

(f) maintain certain records.

III. CONTENTS OF PMNs

By signing this Order, the Company represents that it has carefully reviewed this document and agrees that all information herein that is claimed as confidential by the Company is correctly identified within brackets and that any information that is not bracketed is not claimed as confidential. To make this document available for public viewing, EPA will remove only the information contained within the brackets.

Confidential Business Information Claims (Bracketed in the Preamble and Order): None.

Chemical Identity:

(P-10-0486) Poly[oxy(methyl-1,2-ethanediyl)], -sulfo--hydroxy-, C12-13-branched and linear alkyl ethers, sodium salts (CASRN 958238-81-8).

(P-10-0487) Poly[oxy(methyl-1,2-ethanediyl)], .alpha.-sulfo-.omega.-hydroxy-, C14-15-branched and linear alkyl ethers, sodium salts (CASRN 958238-82-9).

Use: Enhanced Oil Recovery - injected downhole to spur oil production.

Maximum 12-Month Production Volume: 5,400,000 kilograms (kg), combined.

Test Data Submitted with PMN: Environmental fate, environmental effects, physical-chemical properties.

IV. EPA'S ASSESSMENT OF RISK

The following are EPA's predictions regarding the probable toxicity and environmental releases of the PMN substances, based on the information currently available to the Agency.

Environmental Effects Summary: Toxic to aquatic organisms, based upon test data on structurally analogous anionic surfactants. Concentration of concern, for chronic toxicity, 28 ppb (P-10-0486) and 4 ppb (P-10-0487). See www.epa.gov/opptintr/newchems/pubs/chemcat.htm for description of the TSCA New Chemicals Program category for anionic surfactants.

Environmental Release Summary:

	Manufacture	Process 1 (Transfer at Import Receiving Site)	Process 2 (Transfer at Customer Site)	Use (Oilfield Application)
# Sites	Import	1	3	3
Releases (days/year)		1	99	1
Release to Water (kg/day)		Up to 110	Up to 57	Up to 24
Surface Water Concentration (ppb)		27000	8000	57000
Days Exceeding Concern Level		1	99	1

V. EPA'S CONCLUSIONS OF LAW

The following findings constitute the basis of the Consent Order:

(a) EPA is unable to determine the potential for toxicity to aquatic organisms from environmental release of the PMN substances. EPA therefore concludes, pursuant to § 5(e)(1)(A)(i) of TSCA, that the information available to the Agency is insufficient to permit a reasoned evaluation of the environmental effects of the PMN substances.

(b) In light of the potential risk of toxicity to aquatic organisms posed by the uncontrolled manufacture, import, processing, distribution in commerce, use, and disposal of the PMN substances, EPA has concluded, pursuant to § 5(e)(1)(A)(ii)(I) of TSCA, that uncontrolled

manufacture, import, processing, distribution in commerce, use, and disposal of the PMN substances may present an unreasonable risk of injury to the environment.

(c) In light of the estimated production volume and environmental release of the PMN substances, EPA has further concluded, pursuant to § 5(e)(1)(A)(ii)(II) of TSCA, that the PMN substances will be produced in substantial quantities and may reasonably be anticipated to enter the environment in substantial quantities.

VI. INFORMATION REQUIRED TO EVALUATE ENVIRONMENTAL EFFECTS

Triggered Testing. The Order prohibits the Company from exceeding a specified production volume unless the Company submits the information described in the Testing section of this Order in accordance with the conditions specified in the Testing section.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

OFFICE OF CHEMICAL SAFETY
AND POLLUTION PREVENTION

CONSENT ORDER

(a) Scope. The requirements of this Order apply to all commercial manufacturing, processing, distribution in commerce, use and disposal of the chemical substances Poly[oxy(methyl-1,2-ethanediyl)], -sulfo--hydroxy-, C12-13-branched and linear alkyl ethers, sodium salts (Chemical Abstract Service Registry Number ("CASRN") 958238-81-8) (P-10-0486) and Poly[oxy(methyl-1,2-ethanediyl)], .alpha.-sulfo-.omega.-hydroxy-, C14-15-branched and linear alkyl ethers, sodium salts (CASRN 958238-82-9) (P-10-0487) ("the PMN substances") in the United States by Sasol North America Inc.("the Company"), except to the extent that those activities are exempted by paragraph (b).

(b) Exemptions. Manufacturing, processing, distribution in commerce, use and disposal of the PMN substances is exempt from the requirements of this Order (except the requirements in the Recordkeeping and Successor Liability Upon Transfer Of Consent Order sections) only to the extent that (1) these activities are conducted in full compliance with all applicable requirements of

the following exemptions, and (2) such compliance is documented by appropriate recordkeeping as required in the Recordkeeping section of this Order.

(1) Export. Until the Company begins commercial manufacture of the PMN substances for use in the United States, the requirements of this Order do not apply to manufacture, processing or distribution in commerce of the PMN substances solely for export in accordance with TSCA §12(a) and (b), 40 CFR 720.3(s) and 40 CFR Part 707. However, once the Company begins to manufacture the PMN substances for use in the United States, no further activity by the Company involving the PMN substances is exempt as "solely for export" even if some amount of the PMN substances is later exported. At that point, the requirements of this Order apply to all activities associated with the PMN substances while in the territory of the United States. Prior to leaving U.S. territory, even those quantities or batches of the PMN substances that are destined for export are subject to terms of the Order, and count towards any production volume test triggers in the Testing section of this Order.

(2) Research & Development ("R&D"). The requirements of this Order do not apply to manufacturing, processing, distribution in commerce, use and disposal of the PMN substances in small quantities solely for research and development in accordance with TSCA §5(h)(3), 40 CFR 720.3(cc), and 40 CFR 720.36. The requirements of this Order also do not apply to manufacturing, processing, distribution in commerce, use and disposal of the PMN substances when manufactured solely for non-commercial research and development per 40 CFR 720.30(i) and TSCA §5(i).

(3) Byproducts. The requirements of this Order do not apply to the PMN substances when they are produced, without separate commercial intent, only as a "byproduct" as defined at 40 CFR 720.3(d) and in compliance with 40 CFR 720.30(g).

(4) No Separate Commercial Purpose. The requirements of this Order do not apply to the PMN substances when they are manufactured, pursuant to any of the exemptions in 40 CFR 720.30(h), with no commercial purpose separate from the substance, mixture, or article of which it is a part.

(5) Imported Articles. The requirements of this Order do not apply to the PMN substances when imported as part of an "article" as defined at 40 CFR 720.3(c) and in compliance with 40 CFR 720.22(b)(1).

(c) Automatic Sunset. If the Company has obtained for the PMN substances a Test Market Exemption ("TME") under TSCA §5(h)(1) and 40 CFR 720.38 or a Low Volume Exemption ("LVE") or Low Release and Exposure Exemption ("LoREX") under TSCA §5(h)(4) and 40 CFR 723.50(c)(1) and (2) respectively, any such exemption is automatically rendered null and void as of the effective date of this Consent Order.

II. TERMS OF MANUFACTURE, IMPORT, PROCESSING, DISTRIBUTION IN COMMERCE, USE, AND DISPOSAL PENDING SUBMISSION AND EVALUATION OF INFORMATION

PROHIBITION

The Company is prohibited from manufacturing, importing, processing, distributing in commerce, using, or disposing of the PMN substances in the United States, for any nonexempt commercial purpose, pending the development of information necessary for a reasoned evaluation of the environmental effects of the substances, and the completion of EPA's review of, and regulatory action based on, that information, except in accordance with the conditions described in this Order.

TESTING

(a) Section 8(e) Reporting. Reports of information on the PMN substances which reasonably supports the conclusion that the PMN substances present a substantial risk of injury to health or the environment and which is required to be reported under TSCA section 8(e) shall reference the appropriate PMN identification numbers for these substances and contain a statement that the substances are subject to this Consent Order. Additional information regarding section 8(e) reporting requirements can be found at www.epa.gov/oppt/tsca8e.

(b) Notice of Study Scheduling. The Company shall notify, in writing, the EPA Laboratory Data Integrity Branch (2225A), Office of Enforcement and Compliance Assurance, U.S. Environmental Protection Agency, 1200 Pennsylvania Avenue, N.W., Washington, D.C. 20460, of the following

information within 10 days of scheduling any study required to be performed pursuant to this Order, or within 15 days after the effective date of this Order, whichever is later:

(1) The date when the study is scheduled to commence;

(2) The name and address of the laboratory which will conduct the study;

(3) The name and telephone number of a person at the Company or the laboratory whom EPA may contact regarding the study; and,

(4) The appropriate PMN identification number for each substance and a statement that the substance is subject to this Consent Order.

(c) Good Laboratory Practice Standards and Test Protocols. Each study required to be performed pursuant to this Order must be conducted according to TSCA Good Laboratory Practice Standards at 40 CFR Part 792 and using methodologies generally accepted in the relevant scientific community at the time the study is initiated. Before starting to conduct any such study, the Company must obtain approval of test protocols from EPA by submitting written protocols. EPA will respond to the Company within 4 weeks of receiving the written protocols. Published test guidelines specified in paragraph (d) provide general guidance for development of test protocols, but are not themselves acceptable protocols. EPA approval of a test protocol does not mean pre-acceptance of test results.

(d) Triggered Testing Requirements. The Company is prohibited from manufacturing or importing the PMN substances beyond the following aggregate manufacture and import volume ("the production limit"), unless the Company conducts the following studies on PMN substance P-

10-0487 and submits all final reports and underlying data in accordance with the conditions specified in this Testing section.

Production Limit (combined, both PMN substances)	Study (on P-10-0487 only)	Guideline
330,000 kilograms or 18 months, whichever comes later.	Algal toxicity, Tiers I and II (Static method/nominal conditions)	OPPTS 850.5400
	Aquatic invertebrate acute toxicity test, freshwater daphnids (Flow through conditions/ measured concentrations)	OPPTS 850.1010
	Fish acute toxicity (Flow through conditions/ measured concentrations)	OPPTS 850.1075

(e) Test Reports. The Company shall: (1) conduct each study in good faith, with due care, and in a scientifically valid manner; (2) promptly furnish to EPA the results of any interim phase of each study; and (3) submit, in triplicate (with an additional sanitized copy, if confidential business information is involved), the final report of each study and all underlying data ("the report and data") to EPA no later than 14 weeks prior to exceeding the applicable production limit. The final report shall contain the contents specified in 40 CFR 792.185. Underlying data shall be submitted to EPA in accordance with the applicable "Reporting," "Data and Reporting," and "Test Report" subparagraphs in the applicable test guidelines. However, for purposes of this Consent Order, the word "should" in those subparagraphs shall be interpreted to mean "shall" to make clear that the submission of such information is mandatory. EPA will require the submission of raw data such as slides and laboratory notebooks only if EPA finds, on the basis of professional judgment, that an adequate evaluation of the study cannot take place in the absence of these items.

(f) Testing Waivers. The Company is not required to conduct a study specified in paragraph (d) of this Testing section if notified in writing by EPA that it is unnecessary to conduct that study.

(g) Equivocal Data. If EPA finds that the data generated by a study are scientifically equivocal, the Company may continue to manufacture and import the PMN substances beyond the applicable production limit. To seek relief from any other restrictions of this Order, the Company may make a second attempt to obtain unequivocal data by reconducting the study under the conditions specified in paragraphs (b), (c), and (e)(1) and (2). The testing requirements may be modified, as necessary to permit a reasoned evaluation of the risks presented by the PMN substances, only by mutual consent of EPA and the Company.

(h) EPA Determination of Invalid Data.

(1) Except as described in subparagraph (h)(2), if, within 6 weeks of EPA's receipt of a test report and data, the Company receives written notice that EPA finds that the data generated by a study are scientifically invalid, the Company is prohibited from further manufacture and import of the PMN substances beyond the applicable production limit.

(2) The Company may continue to manufacture and import the PMN substances beyond the applicable production limit only if so notified, in writing, by EPA in response to the Company's compliance with either of the following subparagraphs (h)(2)(i) or (h)(2)(ii).

(i) The Company may reconduct the study in compliance with paragraphs (b), (c), and (e)(1) and (2). If there is sufficient time to reconduct the study and submit the report and data

to EPA at least 14 weeks before exceeding the production limit as required by subparagraph (e)(3), the Company shall comply with subparagraph (e)(3). If there is insufficient time for the Company to comply with subparagraph (e)(3), the Company may exceed the production limit and shall submit the report and data in triplicate to EPA within a reasonable period of time, all as specified by EPA in the notice described in subparagraph (h)(1). EPA will respond to the Company, in writing, within 6 weeks of receiving the Company's report and data.

(ii) The Company may, within 4 weeks of receiving from EPA the notice described in subparagraph (h)(1), submit to EPA a written report refuting EPA's finding. EPA will respond to the Company, in writing, within 4 weeks of receiving the Company's report.

(i) Company Determination of Invalid Data.

(1) Except as described in subparagraph (i)(2), if the Company becomes aware that circumstances clearly beyond the control of the Company or laboratory will prevent, or have prevented, development of scientifically valid data under the conditions specified in paragraphs (c) and (e), the Company remains prohibited from further manufacture and import of the PMN substances beyond the applicable production limit.

(2) The Company may submit to EPA, within 2 weeks of first becoming aware of such circumstances, a written statement explaining why circumstances clearly beyond the control of the Company or laboratory will cause or have caused development of scientifically invalid data. EPA will notify the Company of its response, in writing, within 4 weeks of receiving the Company's report. EPA's written response may either:

(i) allow the Company to continue to manufacture and import the PMN substances beyond the applicable production limit, or

(ii) require the Company to continue to conduct, or to reconduct, the study in compliance with paragraphs (b), (c), and (e)(1) and (2). If there is sufficient time to conduct or reconduct the study and submit the report and data to EPA at least 14 weeks before exceeding the production limit as required by subparagraph (e)(3), the Company shall comply with subparagraph (e)(3). If there is insufficient time for the Company to comply with subparagraph (e)(3), the Company may exceed the production limit and shall submit the report and data in triplicate to EPA within a reasonable period of time, all as specified by EPA in the notice described in subparagraph (i)(2). EPA will respond to the Company, in writing, within 6 weeks of receiving the Company's report and data, as to whether the Company may continue to manufacture and import beyond the applicable production limit.

(j) Unreasonable Risk.

(1) EPA may notify the Company in writing that EPA finds that the data generated by a study are scientifically valid and unequivocal and indicate that, despite the terms of this Order, the PMN substances will or may present an unreasonable risk of injury to human health or the environment. EPA's notice may specify that the Company undertake certain actions concerning further testing, manufacture, import, processing, distribution, use and/or disposal of the PMN substances to mitigate exposures to or to better characterize the risks presented by the PMN substances. Within 2 weeks from receipt of such a notice, the Company must cease all

manufacture, import, processing, distribution, use and disposal of the PMN substances, unless either:

(2) within 2 weeks from receipt of the notice described in subparagraph (j)(1), the Company complies with such requirements as EPA's notice specifies; or

(3) within 4 weeks from receipt of the notice described in subparagraph (j)(1), the Company submits to EPA a written report refuting EPA's finding and/or the appropriateness of any additional requirements imposed by EPA. The Company may continue to manufacture, import, process, distribute, use and dispose of the PMN substances in accordance with the terms of this Order pending EPA's response to the Company's written report. EPA will respond to the Company, in writing, within 4 weeks of receiving the Company's report. Within 2 weeks of receipt of EPA's written response, the Company shall comply with any requirements imposed by EPA's response or cease all manufacture, import, processing, distribution, use and disposal of the PMN substances.

(k) Other Requirements. Regardless of the satisfaction of any other conditions in this Testing section, the Company must continue to obey all the terms of this Consent Order until otherwise notified in writing by EPA. The Company may, based upon submitted test data or other relevant information, petition EPA to modify or revoke provisions of this Consent Order pursuant to Part VI. of this Consent Order.

HAZARD COMMUNICATION PROGRAM

(a) Written Hazard Communication Program. The Company shall develop and implement a written hazard communication program for the PMN substances in each workplace. The written program will, at a minimum, describe how the requirements of this section for labels, MSDSs, and other forms of warning material will be satisfied. The Company must make the written hazard communication program available, upon request, to all employees, contractor employees, and their designated representatives. The Company may rely on an existing hazard communication program, including an existing program established under the Occupational Safety and Health Administration ("OSHA") Hazard Communication Standard (29 CFR 1910.1200), to comply with this paragraph provided that the existing hazard communication program satisfies the requirements of this section. The written program shall include the following:

(1) A list of chemical substances known to be present in the work area which are subject to a TSCA section 5(e) consent order signed by the Company or to a TSCA section 5(a)(2) SNUR at 40 C.F.R. Part 721, subpart E. The list must be maintained in each work area where the PMN substances are known to be present and must use the identity provided on the MSDS for the substances required under paragraph (c) of this section. The list may be compiled for the workplace or for individual work areas. If the Company is required either by another Order issued under section 5(e) of TSCA, or by a TSCA section 5(a)(2) SNUR at 40 CFR Part 721, subpart E, to maintain a list of substances, the lists shall be combined with the list under this subparagraph.

(2) The methods the Company will use to inform employees of the environmental hazards of non-routine tasks involving the PMN substances (e.g., cleaning of reactor vessels), and the

environmental hazards associated with the PMN substances contained in unlabeled pipes in their work area.

(b) Labeling.

(1) The Company shall ensure that each container of the substances in the workplace is labeled in accordance with this subparagraph (b)(1).

(i) The label shall, at a minimum, contain the following information:

(I) The identity by which the PMN substances may be commonly recognized.

(II) A statement of the environmental hazard(s) and precautionary measure(s), if any, identified in paragraph (f) of this section, or by the Company, for the PMN substances.

(III) A statement of exposure and precautionary measure(s), if any, identified in paragraph (f) of this section, or by the Company, for the PMN substances.

(ii) The Company may use signs, placards, process sheets, batch tickets, operating procedures, or other such written materials in lieu of affixing labels to individual stationary process containers, as long as the alternative method identifies the containers to which it is applicable and conveys information specified by subparagraph (b)(1)(i) of this section. Any written materials must be readily accessible to the employees in their work areas throughout each work shift.

(iii) The Company need not label portable containers into which the PMN substances are transferred from labeled containers, and which are intended only for the immediate use of the employee who performs the transfer.

(iv) The Company shall not remove or deface an existing label on containers of the PMN substances obtained from persons outside the Company unless the container is immediately re-labeled with the information specified in subparagraph (b)(1)(i) of this section.

(2) The Company shall ensure that each container of the substances leaving its workplace for distribution in commerce is labeled in accordance with this subparagraph (b)(2).

(i) The label shall, at a minimum, contain the following information:

(I) The information prescribed in subparagraph (b)(1)(i) of this section.

(II) The name and address of the manufacturer or a responsible party who can provide additional information on the substances for hazard evaluation and any appropriate emergency procedures.

(ii) The label shall not conflict with the requirements of the Hazardous Materials Transportation Act (18 U.S.C. 1801 et. seq.) and regulations issued under that Act by the Department of Transportation.

(3) The label, or alternative forms of warning, shall be legible and prominently displayed.

(4) The label, or alternative forms of warning, shall be printed in English; however, the information may be repeated in other languages.

(5) If the label or alternative form of warning is to be applied to a mixture containing the PMN substances in combination with any other substance that is either subject to another TSCA section 5(e) Order applicable to the Company, or subject to a TSCA section 5(a)(2) SNUR at 40 CFR Part 721, subpart E, or defined as a "hazardous chemical" under the OSHA Hazard Communication Standard (29 CFR 1900.1200), the Company may prescribe on the label, MSDS, or alternative form of warning, the measures to control worker exposure or environmental release

which the Company determines provide the greatest degree of protection. However, should these control measures differ from the applicable measures required under this Order, the Company must seek a determination of equivalency for such alternative control measures pursuant to 40 CFR 721.30 before prescribing them under this subparagraph (b)(5).

(6) If the Company becomes aware of any significant new information regarding the hazards of the PMN substances or ways to protect against the hazards, this new information must be added to the label within 3 months from the time the Company becomes aware of the new information. If the PMN substances are not being manufactured, imported, processed, or used in the Company's workplace, the Company must add the new information to the label before the PMN substances is reintroduced into the workplace.

(c) Material Safety Data Sheets.

(1) The Company must obtain or develop an MSDS for the PMN substances.

(2) The MSDS shall contain, at a minimum, the following information:

(i) The identity used on the container label of the PMN substances under this section, and, if not claimed confidential, the chemical and common name of the PMN substances. If the chemical and common names are claimed confidential, a generic chemical name must be used.

(ii) Physical and chemical characteristics of the substances known to the Company, (e.g., vapor pressure, flash point).

(iii) The physical hazards of the substances known to the Company, including the potential for fire, explosion, and reactivity.

(iv) The potential environmental hazards as specified in paragraph (f) of this section.

(v) Signs and symptoms of exposure, and any medical conditions which are expected to be aggravated by exposure to the PMN substance known to the Company.

(vi) The primary routes of exposure to the PMN substance.

(vii) Precautionary measures to control worker exposure and/or environmental release required by this Order, or alternative control measures which EPA has determined under 40 CFR 721.30 provide substantially the same degree of protection as the identified control measures.

(viii) Any generally applicable precautions for safe handling and use of the PMN substances which are known to the Company, including appropriate hygienic practices, protective measures during repair and maintenance of contaminated equipment, and procedures for response to spills and leaks.

(ix) Any generally applicable control measures which are known to the Company, such as appropriate engineering controls, work practices, or personal protective equipment.

(x) Emergency first aid procedures known to the Company.

(xi) The date of preparation of the MSDS or of its last revision.

(xii) The name, address, and telephone number of the Company or another responsible party who can provide additional information on the chemical substances and any appropriate emergency procedures.

(3) If no relevant information is found or known for any given category on the MSDS, the Company must mark the MSDS to indicate that no applicable information was found.

(4) Where multiple mixtures containing the PMN substances have similar compositions (i.e., the chemical ingredients are essentially the same, but the specific composition varies from mixture to mixture) and similar hazards, the Company may prepare one MSDS to apply to all of these multiple mixtures.

(5) If the Company becomes aware of any significant new information regarding the hazards of the PMN substance or ways to protect against the hazards, this new information must be added to the MSDS within 3 months from the time the Company becomes aware of the new information. If the PMN substance is not being manufactured, imported, processed, or used in the Company's workplace, the Company must add the new information to the MSDS before the PMN substance is reintroduced into the workplace.

(6) The Company must ensure that persons receiving the PMN substances from the Company are provided an appropriate MSDS with their initial shipment and with the first shipment after an MSDS is revised. The Company may either provide the MSDS with the shipped containers or send it to the person prior to or at the time of shipment.

(7) The Company must maintain a copy of the MSDS in its workplace, and must ensure that it is readily accessible during each work shift to employees when they are in their work areas.

(8) The MSDS may be kept in any form, including as operating procedures, and may be designed to cover groups of substances in a work area where it may be more appropriate to address the potential hazards of a process rather than individual substances. However, in all cases, the required information must be provided for the PMN substances and must be readily accessible during each work shift to employees when they are in their work areas.

(9) The MSDS must be printed in English; however, the information may be repeated in other languages.

(d) Employee Information and Training. The Company must ensure that employees are provided with information and training on the PMN substances. This information and training must be provided at the time of each employee's initial assignment to a work area containing the PMN substances and whenever the PMN substances are introduced into the employee's work area for the first time.

(1) The information provided to employees under this paragraph shall include:

(i) The requirements of this section.

(ii) Any operations in the work area where the PMN substances is present.

(iii) The location and availability of the written hazard communication program required under paragraph (a) of this section, including the list of substances required by subparagraph (a)(1) of this section and MSDSs required by paragraph (c) of this section.

(2) The training provided to employees shall include:

(i) Methods and observations that may be used to detect the presence or release of the PMN substances in or from an employee's work area (such as exposure monitoring conducted by the Company, continuous monitoring devices, visual appearance, or odor of the substances when being released).

(ii) The potential environmental hazards of the PMN substances as specified in paragraph (f) of this section.

(iii) The measures employees can take to protect the environment from the PMN substances, including specific procedures the Company has implemented to protect the environment from exposure to the PMN substances, including appropriate work practices, emergency procedures, engineering controls, and other measures to control environmental release required under this Order, or alternative control measures which EPA has determined under 40 CFR 721.30 provide the same degree of protection as the specified control measures.

(iv) The requirements of the hazard communication program developed by the Company under this section, including an explanation of the labeling system and the MSDS required by this section and guidance on obtaining and using appropriate hazard information.

(e) Existing Hazard Communication Program. The Company need not take additional actions if existing programs and procedures satisfy the requirements of this section.

(f) Environmental Hazard and Precautionary Statements. The following environmental hazard and precautionary statements shall appear on each label as specified in paragraph (b) and the MSDS as specified in paragraph (c) of this section:

(1) Environmental hazard statements. These substances may be:

(i) toxic to fish.

(ii) toxic to aquatic organisms.

(2) Environmental hazard precautionary statements. Notice to users:

(i) disposal restrictions apply.

(ii) spill clean-up restrictions apply.

(iii) do not release to water.

(3) The environmental hazard and precautionary statement on the label prepared pursuant to paragraph (b) of this section must be followed by the statement: "See the MSDS for details."

MANUFACTURING

(a)(1) Prohibition. The Company shall not cause, encourage, or suggest the manufacture or import of the PMN substances by any other person.

(2) Sunset Following SNUR. Subparagraph (a)(1) shall expire 75 days after promulgation of a final significant new use rule ("SNUR") governing the PMN substances under section 5(a)(2) of TSCA unless the Company is notified on or before that day of an action in a Federal Court seeking judicial review of the SNUR. If the Company is so notified, subparagraph (a)(1) shall not expire until EPA notifies the Company in writing that all Federal Court actions involving the SNUR have been resolved and the validity of the SNUR affirmed.

(3) Notice of SNUR. When EPA promulgates a final SNUR for the PMN substances and subparagraph (a)(1) expires in accordance with subparagraph (a)(2), the Company shall notify each person whom it causes, encourages or suggests to manufacture or import the PMN substances of the existence of the SNUR.

DISTRIBUTION

(a) Export Notice Requirement. No later than the date of distribution, the Company shall notify in writing any person to whom it distributes the PMN substances that, due to the issuance of this Consent Order under section 5(e) of TSCA, the PMN substances are subject to the export

notification requirements of TSCA section 12(b) and 40 CFR Part 707 Subpart D. Such notice shall contain, in the form in which it appears in this Consent Order, the following information: (1) the PMN number, and (2) either (A) the specific chemical identity of the PMN substance, or (B) if the specific chemical identity is confidential, the generic chemical identity.

(b) Distribution Requirements. Except as provided in paragraph (c), the Company shall distribute the PMN substances outside the Company, other than for disposal, only to a person who has agreed in writing prior to the date of distribution, to:

(1) Notify in writing any person to whom it distributes the PMN substances that, due to the issuance of this Consent Order under section 5(e) of TSCA, the PMN substances are subject to the export notification requirements of TSCA section 12(b) and 40 CFR Part 707 Subpart D. Such notice shall contain, in the form in which it appears in this Consent Order, the PMN numbers and the specific chemical identity of the PMN substances.

(2) Not further distribute the PMN substances to any other person, other than for disposal .

(3) Comply with the same requirements and restrictions, if any, required of the Company in the Hazard Communication Program section of this Order,

(4) Comply with the same environmental release restrictions, if any, required of the Company in the Disposal and Release to Water sections of this Order.

(c) Temporary Transport and Storage. Notwithstanding paragraph (b), the Company may distribute the PMN substances outside the Company for temporary transport and storage in sealed

containers (labeled in accordance with paragraph (b)(2) of the Hazard Communication Program section of this Order) provided the following two conditions are met:

(1) Subsequent to any such exempt temporary transport or storage of sealed containers, the PMN substances may be distributed only to the Company or a person who has given the Company the written agreement required by paragraph (b).

(2) Any environmental release resulting from opening the sealed containers and removing or washing out the PMN substances may occur only while the PMN substances are in the possession and control of the Company or a person who has given the Company the written agreement required by paragraph (b).

(d) Recipient Non-Compliance. If, at any time after commencing distribution in commerce of the PMN substances, the Company obtains knowledge that a recipient of the substance has failed to comply with any of the conditions specified in paragraph (b) of this Distribution section or, after paragraph (b)(2) expires in accordance with subparagraph (e)(1), has engaged in a significant new use of the PMN substances (as defined in 40 CFR Part 721, Subpart E) without submitting a significant new use notice to EPA, the Company shall cease supplying the substances to that recipient, unless the Company is able to document each of the following:

(1) That the Company has, within 5 working days, notified the recipient in writing that the recipient has failed to comply with any of the conditions specified in paragraph (b) of this Distribution section, or has engaged in a significant new use of the PMN substances without submitting a significant new use notice to EPA.

(2) That, within 15 working days of notifying the recipient of the noncompliance, the Company received from the recipient, in writing, a statement of assurance that the recipient is aware of the terms of paragraph (b) of this Distribution section and will comply with those terms, or is aware of the terms of the significant new use rule for the PMN substances and will not engage in a significant new use without submitting a significant new use notice to EPA.

(3) If, after receiving a statement of assurance from a recipient under subparagraph (d)(2) of this Distribution section, the Company obtains knowledge that the recipient has failed to comply with any of the conditions specified in paragraph (b) of this Distribution section, or has engaged in a significant new use of the PMN substances without submitting a significant new use notice to EPA, the Company shall cease supplying the PMN substances to that recipient, shall notify EPA of the failure to comply, and shall resume supplying the PMN substances to that recipient only upon written notification from the Agency.

(e) Sunset Following SNUR. (1) Paragraph (b)(2) of this Distribution section shall expire 75 days after promulgation of a final SNUR for the PMN substances under section 5(a)(2) of TSCA, unless the Company is notified on or before that day of an action in a Federal Court seeking judicial review of the SNUR. If the Company is so notified, paragraph (b)(2) of this Distribution section shall not expire until EPA notifies the Company in writing that all Federal Court actions involving the SNUR have been resolved and the validity of the SNUR affirmed.

(2) When EPA promulgates a final SNUR for the PMN substances and paragraph (b)(2) of this Distribution section expires in accordance with subparagraph (e)(1), the Company shall notify each person to whom it distributes the PMN substances of the existence of the SNUR. Such notification

must be in writing and must specifically include all limitations contained in the SNUR which are defined as significant new uses, and which would invoke significant new use notification to EPA for the PMN substances. Such notice must also reference the publication of the SNUR for these PMN substances in either the Federal Register or the Code of Federal Regulations. After promulgation of a SNUR and expiration of subparagraph (b)(2), such notice may substitute for the written agreement required in the introductory clause of paragraph (b); so that, if the Company provides such notice to the persons to whom it distributes the PMN substances, then the Company is not required to obtain from such persons the written agreement specified in paragraph (b).

DISPOSAL

(a) The Company shall dispose of the PMN substances and any waste stream containing the PMN substances only as follows. This provision does not supersede or preempt any applicable federal, state, and local laws and regulations if those laws are more stringent than the requirements below.

(1) The PMN substances in solvent rinsate resulting from cleaning of storage and holding tanks, shipboard tanks, iso containers, rail cars, and trucks used to transport the PMN substances may only be disposed of by incineration.

(2) Sampling wastes containing the PMN substances may only be disposed of by incineration.

(3) For oilfield applications, when the PMN substances will no longer be injected into a well at a particular site, the water rinsate of the field holding tank and any remaining field water containing the PMN substances must be injected into the well or designated disposal well on the field.

RELEASE TO WATER

(a) This provision does not supersede or preempt any applicable federal, state, and local laws and regulations. (Those other laws may be more stringent than the requirements below.) The Company is prohibited from any predictable or purposeful release of the PMN substances, or any waste stream from manufacturing/processing/use containing the PMN substances:

(i) Into the waters of the United States if the quotient from the formula:

$$\frac{\text{number of kilograms/day/site released}}{\text{receiving stream flow (million liters/day)}} \times 1000 = \text{N parts per billion}$$

exceeds 28 parts per billion ("ppb") or 4 ppb for P-10-0486 or P-10-0487, respectively, when calculated using the methods described in 40 CFR 721.91.

(ii) In lieu of calculating the quotient in subparagraph (i), monitoring or alternative calculations may be used to predict the surface water concentration expected to result from the intended release of the substances, if the monitoring procedures or calculations have been approved for such purpose by EPA. EPA will review and act on a written request to approve monitoring procedures or alternative calculations within 90 days after such a request is received. The Agency will inform the Company of the disposition of such requests in writing and, where a request is denied, will explain the reasons therefore.

III. RECORDKEEPING

(a) Records. The Company shall maintain the following records until 5 years after the date they are created and shall make them available for inspection and copying by EPA in accordance with section 11 of TSCA:

(1) Exemptions. Records documenting that the PMN substances did in fact qualify for any one or more of the exemptions described in Section I, Paragraph (b) of this Order. Such records must satisfy all the statutory and regulatory recordkeeping requirements applicable to the exemption being claimed by the Company. Any amounts or batches of the PMN substances eligible for the Export exemption in Section I, Paragraph (b)(1) of this Order are exempt from all the requirements in this Recordkeeping section, if the Company maintains, for 5 years from the date of their creation, copies of the export label and export notice to EPA, required by TSCA sections 12(a)(1)(B) and 12(b), respectively. Any amounts or batches of the PMN substances eligible for the Research and Development exemption in Section I, Paragraph (b)(2) of this Order are exempt from all the requirements in this Recordkeeping section, if the Company maintains, for 5 years from the date of their creation, the records required by 40 CFR 720.78(b). For any amounts or batches of the PMN substances claimed to be eligible for any other exemption described in Section I, Paragraph (b) of this Order, the Company shall keep records demonstrating qualification for that exemption as well as the records specified in paragraphs (2) and (3) below, but is exempt from the other recordkeeping requirements in this Recordkeeping section;

(2) Records documenting the manufacture and importation volume of the PMN substances and the corresponding dates of manufacture and import;

(3) Records documenting the names and addresses (including shipment destination address, if different) of all persons outside the site of manufacture or import to whom the Company directly sells or transfers the PMN substances, the date of each sale or transfer, and the quantity of the substances sold or transferred on such date;

(4) Records documenting the address of all sites of manufacture, import, processing, and use;

(5) Records documenting establishment and implementation of the hazard communication program required by the Hazard Communication Program section of this Order;

(6) Copies of labels required under the Hazard Communication Program section of this Order;

(7) Copies of Material Safety Data Sheets required by the Hazard Communication Program section of this Order;

(8) Records documenting compliance with any applicable manufacturing, processing, use, and distribution restrictions in the Manufacturing and Distribution sections of this Order, including distributees' written agreement to comply with the Distribution section of this Order;

(9) Records documenting compliance with any applicable disposal requirements under the Disposal section of this Order, including method of disposal, location of disposal sites, dates of disposal, and volume of PMN substances disposed. Where the estimated disposal volume is not known to the Company and is not reasonably ascertainable by the Company, the Company must maintain other records which demonstrate establishment and implementation of a program that ensures compliance with any applicable disposal requirements;

(10) Records documenting establishment and implementation of procedures that ensure compliance with any applicable water discharge limitation in the Release to Water section of this Order;

(11) Copies of any Transfer Documents and notices required by the Successor Liability section of this Order, if applicable; and,

(12) The Company shall keep a copy of this Order at each of its sites where the PMN substances is manufactured or imported.

(b) Applicability. The provisions of this Recordkeeping Section are applicable only to activities of the Company and its Contract Manufacturer, if applicable, and not to activities of the Company's customers.

(c) OMB Control Number. Under the Paperwork Reduction Act and its regulations at 5 CFR Part 1320, particularly 5 CFR 1320.5(b), the Company is not required to respond to this "collection of information" unless this Order displays a currently valid control number from the Office of Management and Budget ("OMB"), and EPA so informs the Company. The "collection of information" required in this TSCA §5(e) Consent Order has been approved under currently valid **OMB Control Number 2070-0012.**

IV. REQUESTS FOR PRE-INSPECTION INFORMATION

(a) EPA's Request for Information. Pursuant to section 11 of TSCA and 40 CFR 720.122, EPA may occasionally conduct on-site compliance inspections of Company facilities and conveyances

associated with the PMN substances. To facilitate such inspections, EPA personnel may contact the Company in advance to request information pertinent to the scheduling and conduct of such inspections. Such requests may be written or oral. The types of information that EPA may request include, but are not limited to, the following:

(i) Expected dates and times when the PMN substances will be in production within the subsequent 12 months;

(ii) Current workshift schedules for workers who are involved in activities associated with the PMN substance and may reasonably be exposed to the PMN substance;

(iii) Current job titles or categories for workers who are involved in activities associated with the PMN substance and may reasonably be exposed to the PMN substance;

(iv) Existing exposure monitoring data for workers who are involved in activities associated with the PMN substance and may reasonably be exposed to the PMN substance;

(v) Records required by the Recordkeeping section of this Order; and/or

(vi) Any other information reasonably related to determining compliance with this Order or conducting an inspection for that purpose.

(b) Company's Response. The Company shall respond to such requests within a reasonable period of time, but in no event later than 30 days after receiving EPA's request. When requested in writing by EPA, the Company's response shall be in writing. To the extent the information is known to or reasonably ascertainable to the Company at the time of the request, the Company's response shall demonstrate a good faith effort to provide reasonably accurate and detailed answers to all of EPA's requests.

(c) Confidential Business Information. Any Confidential Business Information ("CBI") that the Company submits to EPA pursuant to paragraph (b) shall be protected in accordance with §14 of TSCA and 40 CFR Part 2.

V. SUCCESSOR LIABILITY UPON TRANSFER OF CONSENT ORDER

(a) Scope. This section sets forth the procedures by which the Company's rights and obligations under this Order may be transferred when the Company transfers its interests in the PMN substances, including the right to manufacture the PMN substances, to another person outside the Company (the "Successor in Interest").

(b) Relation of Transfer Date to Notice of Commencement ("NOC").

(1) Before NOC. If the transfer from the Company to the Successor in Interest is effective before EPA receives a notice of commencement of manufacture or import ("NOC") for the PMN substances from the Company pursuant to 40 CFR 720.102, the Successor in Interest must submit a new PMN to EPA and comply fully with Section 5(a)(1) of TSCA and 40 CFR part 720 before commencing manufacture or import of the PMN substances.

(2) After NOC. If the transfer from the Company to the Successor in Interest is effective after EPA receives a NOC, the Successor in Interest shall comply with the terms of this Order and shall not be required to submit a new PMN to EPA.

(c) Definitions. The following definitions apply to this Successor Liability section of the Order:

(1) "Successor in Interest" means a person outside the Company who has acquired the Company's full interest in the rights to manufacture the PMN substances, including all ownership rights and legal liabilities, through a transfer document signed by the Company, as transferor, and the Successor in Interest, as transferee. The term excludes persons who acquire less than the full interest of the Company in the PMN substances, such as a licensee who has acquired a limited license to the patent or manufacturing rights associated with the PMN substances. A Successor in Interest must be incorporated, licensed, or doing business in the United States in accordance with 40 CFR 720.22(a)(3).

(2) "Transfer Document" means the legal instrument(s) used to convey the interests in the PMN substances, including the right to manufacture the PMN substances, from the Company to the Successor in Interest.

(d) Notices.

(1) Notice to Successor in Interest. On or before the effective date of the transfer, the Company shall provide to the Successor in Interest, by registered mail, a copy of the Consent Order and the "Notice of Transfer" document which is incorporated by reference as Attachment B to this Order.

(2) Notice to EPA. Within 10 business days of the effective date of the transfer, the Company shall, by registered mail, submit the fully executed Notice of Transfer document to: U.S. Environmental Protection Agency, New Chemicals Branch (7405), 1200 Pennsylvania Avenue, N.W., Washington, D.C. 20460.

(3) Transfer Document. Copies of the Transfer Document must be maintained by the Successor in Interest at its principal place of business, and at all sites where the PMN substances is manufactured or imported. Copies of the Transfer Document must also be made available for inspection pursuant to Section 11 of TSCA, must state the effective date of transfer, and must contain provisions which expressly transfer liability for the PMN substances under the terms of this Order from the Company to the Successor in Interest.

(e) Liability.

(1) The Company shall be liable for compliance with the requirements of this Order until the effective date of the transfer described above.

(2) The Successor in Interest shall be liable for compliance with the requirements of this Order effective as of the date of transfer.

(3) Nothing in this section shall be construed to prohibit the Agency from taking enforcement action against the Company after the effective date of the transfer for actions taken, or omissions made, during the time in which the Company manufactured, processed, used, distributed in commerce, or disposed of the PMN substances pursuant to the terms of this Consent Order.

(f) Obligations to Submit Test Data under Consent Order. If paragraph (d) of the Testing section of this Consent Order requires the Company to submit test data to EPA at a specified production volume ("test trigger"), the aggregate volume of the PMN substances manufactured and imported by the Company up to the date of transfer shall count towards the test trigger applicable to the Successor in Interest.

VI. MODIFICATION AND REVOCATION OF CONSENT ORDER

The Company may petition EPA at any time, based upon new information on the environmental effects or environmental release of the PMN substances, to modify or revoke substantive provisions of this Order. The exposures and risks identified by EPA during its review of the PMN substances and the information EPA determined to be necessary to evaluate those exposures and risks are described in the preamble to this Order. However, in determining whether to amend or revoke this Order, EPA will consider all relevant information available at the time the Agency makes that determination, including, where appropriate, any reassessment of the test data or other information that supports the findings in this Order, an examination of new test data or other information or analysis, and any other relevant information.

EPA will issue a modification or revocation if EPA determines that the activities proposed therein will not present an unreasonable risk of injury to health or the environment and will not result in significant or substantial human exposure or substantial environmental release in the absence of data sufficient to permit a reasoned evaluation of the health or environmental effects of the PMN substances.

In addition, the Company may petition EPA at any time to make other modifications to the language of this Order. EPA will issue such a modification if EPA determines that the modification is useful, appropriate, and consistent with the structure and intent of this Order as issued.

VII. EFFECT OF CONSENT ORDER

(a) Waiver. By consenting to the entry of this Order, the Company waives its rights to file objections to this Order pursuant to section 5(e)(1)(C) of TSCA, to receive service of this Order no later than 45 days before the end of the review period pursuant to section 5(e)(1)(B) of TSCA, and to challenge the validity of this Order in any subsequent action. Consenting to the entry of this Order, and agreeing to be bound by its terms, do not constitute an admission by the Company as to the facts or conclusions underlying the Agency's determinations in this proceeding. This waiver does not affect any other rights that the Company may have under TSCA.

(b) CBI Brackets. By signing this Order, the Company represents that it has carefully reviewed this document and hereby agrees that all information herein that is claimed as confidential by the Company (per section 14 of TSCA, 40 CFR Part 720 Subpart E, and 40 CFR Part 2) is correctly identified within brackets and that any information that is not bracketed is not claimed as confidential. To make this document available for public viewing, EPA will remove only the information contained within the brackets.

7/21/11
Date

Maria J. Doa, Director
Chemical Control Division
Office of Pollution Prevention and Toxics

July 21, 2011
Date

Name: Michael S. Thomas
Title: President
Company: Sasol North America

ATTACHMENT A

DEFINITIONS

Note: The attached Order may not contain some of the terms defined below.

"Chemical name" means the scientific designation of a chemical substance in accordance with the nomenclature system developed by the Chemical Abstracts Service's rules of nomenclature, or a name which will clearly identify a chemical substance for the purpose of conducting a hazard evaluation.

"Company" means the person or persons subject to this Order.

"Common name" means any designation or identification such as code name, code number, trade name, brand name, or generic chemical name used to identify a chemical substance other than by its chemical name.

"Container" means any bag, barrel, bottle, box, can, cylinder, drum, reaction vessel, storage tank, or the like that contains a hazardous chemical. For purposes of this section, pipes or piping systems, and engines, fuel tanks, or other operating systems in a vehicle, are not considered to be containers.

"Identity" means any chemical or common name used to identify a chemical substance or a mixture containing that substance.

"Immediate use." A chemical substance is for the "immediate use" of a person if it is under the control of, and used only by, the person who transferred it from a labeled container and will only be used by that person within the work shift in which it is transferred from the labeled container.

"Manufacturing stream" means all reasonably anticipated transfer, flow, or disposal of a chemical substance, regardless of physical state or concentration, through all intended operations of manufacture, including the cleaning of equipment.

"MSDS" means material safety data sheet, the written listing of data for the chemical substance.

"PMN substance" means the chemical substance described in the Premanufacture notice submitted by the Company relevant to this Order.

"Process stream" means all reasonably anticipated transfer, flow, or disposal of a chemical substance, regardless of physical state or concentration, through all intended operations of processing, including the cleaning of equipment.

"Scientifically invalid" means any significant departure from the EPA-approved protocol or the Good Laboratory Practice Standards at 40 CFR Part 792 without prior or subsequent Agency approval that prevents a reasoned evaluation of the health or environmental effects of the PMN substance.

"Scientifically equivocal data" means data which, although developed in apparent conformity with the Good Laboratory Practice Standards and EPA-approved protocols, are inconclusive, internally inconsistent, or otherwise insufficient to permit a reasoned evaluation of the potential risk of injury to human health or the environment of the PMN substance.

"Sealed container" means a closed container that is physically and chemically suitable for long-term containment of the PMN substance, and from which there will be no human exposure to, nor environmental release of, the PMN substance during transport and storage.

"Use stream" means all reasonably anticipated transfer, flow, or disposal of a chemical substance, regardless of physical state or concentration, through all intended operations of industrial, commercial, or consumer use.

"Waters of the United States" has the meaning set forth in 40 CFR 122.2.

"Work area" means a room or defined space in a workplace where the PMN substance is manufactured, processed, or used and where employees are present.

"Workplace" means an establishment at one geographic location containing one or more work areas.

ATTACHMENT B

NOTICE OF TRANSFER
OF
TOXIC SUBSTANCES CONTROL ACT
SECTION 5(e) CONSENT ORDER

_____ _____
Company (Transferor) PMN Number

1. Transfer of Manufacture Rights. Effective on _____, the Company did sell or otherwise transfer to _____, ("Successor in Interest") the rights and liabilities associated with manufacture of the above-referenced chemical substance, which was the subject of a premanufacture notice ("PMN") and is governed by a Consent Order issued by the U.S. Environmental Protection Agency ("EPA") under the authority of §5(e) of the Toxic Substances Control Act ("TSCA," 15 U.S.C. §2604(e)).

2. Assumption of Liability. The Successor in Interest hereby certifies that, as of the effective date of transfer, all actions or omissions governed by the applicable Consent Order limiting manufacture, processing, use, distribution in commerce and disposal of the PMN substance, shall be the responsibility of the Successor in Interest. Successor in Interest also certifies that it is incorporated, licensed, or doing business in the United States in accordance with 40 CFR 720.22(a)(3).

3. Confidential Business Information. The Successor in Interest hereby:

___ reasserts,

___ relinquishes, or

___ modifies

all Confidential Business Information ("CBI") claims made by the Company, pursuant to Section 14 of TSCA and 40 CFR part 2, for the PMN substance(s). Where "reasserts" or "relinquishes" is indicated, that designation shall be deemed to apply to all such claims. Where "modifies" is indicated, such modification shall be explained in detail in an attachment to this Notice of Transfer. Information which has been previously disclosed to the public (e.g., a chemical identity that was not claimed as CBI by the original submitter) would not subsequently be eligible for confidential treatment under this Notice of Transfer.

TOXIC SUBSTANCES CONTROL ACT
SECTION 5(e) CONSENT ORDER

NOTICE OF TRANSFER
(continued)

Company (Transferor)	PMN Number
Signature of Authorized Official	Date
Printed Name of Authorized Official	
Title of Authorized Official	
Successor in Interest	
Signature of Authorized Official	Date
Printed Name of Authorized Official	
Title of Authorized Official	
Address	
City, State, Zip Code	

TOXIC SUBSTANCES CONTROL ACT
SECTION 5(e) CONSENT ORDER

NOTICE OF TRANSFER
(continued)

_____
Successor's Technical Contact

_____
Address

_____
City, State, Zip Code

_____
Phone

TSCA NON-CONFIDENTIAL BUSINESS INFORMATION

DOCUMENT DESCRIPTION	DOCUMENT CONTROL NUMBER	DATE RECEIVED
P10-486/487		7-24-14

COMMENTS: 5(E) CONSENT ORDER REVOCATION

ORIGINAL

DOES NOT CONTAIN CBI

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

OFFICE OF POLLUTION PREVENTION AND TOXICS

REGULATION OF A NEW CHEMICAL SUBSTANCE

PENDING DEVELOPMENT OF INFORMATION

In the matter of:	)	Premanufacture Notice Number:
	)	
	)	
	)	
	)	
	)	
Sasol North America Inc.	)	P-10-0486 and P-10-0487
	)	
	)	
	)	
	)	
	)	

Revocation of Consent Order

Preamble

Pursuant to § 5(a) of the Toxic Substances Control Act ("TSCA"), Sasol North America Inc. ("the Company") submitted premanufacture notices ("PMNs") for the chemical substances poly[oxy(methy1-1,2-ethanediy1)], -sulfo-hydroxy-, Cl2-13-branched and linear alkyl ethers, sodium salts (ChemicalAbstract Service Registry Number (CASRN 958238-81-8) and poly[oxy(methyl-1,2-ethanediyl)], .alpha.-sulfo-.omega.-hydroxy-, C14-15-branched and linear alkyl ethers, sodium salts (CASRN 958238-82-9) ("the PMN substances"), P-10-0486 and P-10-0487, respectively. The PMNs described the intended use of the substances as enhanced oil recovery- injected downhole to spur oil production.

Upon review of P-10-0486 and P-10-0487 in 2010, EPA determined that the information available to the Agency was insufficient to permit a reasoned evaluation of the environmental effects resulting from exposure to the PMN substances and that there was potential risk of toxicity to aquatic organisms posed by the uncontrolled manufacture (including import), processing, distribution in commerce, use, and disposal of the PMN substances. In addition, EPA determined that the PMN substances would be produced in substantial quantities, and that there might be significant or substantial environmental exposure to them. EPA determined that it was necessary to regulate the PMN substances through a TSCA Section 5(e) Consent Order.

The Order (PMN P10-0486 and P-10-0487, effective on July 22, 2011) required the Company to maintain certain records and submit to EPA the results of three aquatic toxicity tests – an algal toxicity test, tiers I and II (OPPTS 850.5400), an aquatic invertebrate acute toxicity test, freshwater daphnids (OPPTS 850.1010), and a fish acute toxicity test (OPPTS 850.1075) on P-10-0487 14 weeks before manufacturing an aggregate of 330,000 kg of the PMN substances. The Order also required the Company to label the PMN substances and provide Material Safety

Data Sheets ("MSDS") in accordance with the provisions of the Hazard Communication Program section; distribute the PMN substances only to a person who agrees to follow the same restrictions (except the testing requirements); comply with the Disposal provisions; and comply with the Release to Water provisions.

The Company included the results of the combined biodegradation and aquatic toxicity tests on P-10-0486 with the original PMN submissions, but EPA did not accept the data at that time as valid for purposes of determining potential environmental toxicity to aquatic organisms. However, EPA did accept the data as valid for purposes of ascertaining environmental fate of the PMN substances. Based on discussions with the Company and other PMN submitters subsequent to the signing of the Consent Order, EPA re-evaluated the data and determined that the data could, in fact, be used to evaluate aquatic toxicity of the PMN substances. This combined biodegradation/ecological toxicity testing, taken together, demonstrated that subsequent to the ready biodegradation portion of this combined study, no further ecologically toxic substances remained from the P-10-0486 parent substance. EPA believes the results of the test data on P-10-0486 can also be applied to the structurally analogous P-10-0487 substance.

On February 2, 2013, the Company, by letter, petitioned the Agency revoke the Section 5(e) Consent Order based on the fact that it had complied with the Testing and Risk Notification sections of the Order for the aquatic toxicity tests based on the studies contained with the original PMNs.

EPA expects the PMN substances to undergo wastewater treatment ("WWT") or be released to publicly owned treatment works ("POTWs") with biological degradation prior to being discharged to the environment. EPA no longer expects potential risk of toxicity to aquatic organisms posed by the activities described in the PMNs. Although EPA continues to expect

that the PMN substances will be produced in substantial quantities, the Agency no longer finds that there might be significant or substantial environmental exposure to the substances under the use patterns described in the PMNs. If the use patterns change, such that PMN substances were to be directly discharged into the waters of the United States without prior biological treatment via a POTW or WWT, then EPA would expect potential unreasonable risks to aquatic organisms in the environment.

EPA is not aware that the company has failed to comply with any of the requirements of the Consent Order, and EPA does not expect the PMN substances to present an unreasonable risk to the environment or human health, as per Section VI of the Consent Order. As a result, EPA has decided to revoke the Order for P-10-0486 and P-10-0487 and to modify the Section 5(e) Significant New Use Rules, 40 CFR 721.10283 and 40 CFR 721.10284, associated with these cases. EPA intends the new Significant New Uses to be use in a non-industrial setting (as described in 40 CFR 721.80(l)) and release of these PMN substances from manufacturing, processing, or use without prior biological treatment (activated sludge or equivalent) plus clarification (as described in 40 CFR 721.90(a)(2)(ii), (b)(2)(ii), and (c)(2)(ii)). The recommended testing in the SNUR will be modified to be:

- Algal toxicity, Tiers I and II (Static method/nominal conditions) OSCPP 850.5400
- Aquatic invertebrate acute toxicity test, freshwater daphnids (Flow through conditions/measured concentrations) OPPTS 850.1010
- Fish acute toxicity (Flow through conditions/ measured concentrations) OPPTS 850.1075.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

OFFICE OF CHEMICAL SAFETY
AND POLLUTION PREVENTION

CONTAINS NO CBI

APR 10 2014

REVOCATION OF CONSENT ORDER

Under the authority of section 5(e) of the Toxic Substances Control Act (15 U.S.C. 2604(e)) and Section III of the Consent Order, by and between the Environmental Protection Agency ("EPA") and Sasol, Inc. ("the Company"), entered into on July 22, 2010, EPA, upon request of the Company, hereby revokes in its entirety the Consent Order for Premanufacture Notices P-10-0486 and P-10-0487. This revocation is effective on the date of signature.

4/10/14
Date

Maria J. Doa, Ph.D., Director
Chemical Control Division
Office of Pollution Prevention and Toxics